December 20, 2012

Mr. Douglas Petroff, Project Manager
IDEM – Office of Land Quality
Federal Programs Section
100 N Senate Ave, Room IGCN 1101
Indianapolis, IN 46204

RE: Response to IDEM Letter Dated November 30, 2012, to U.S. EPA, Region V "Site Investigation Data Related to the Lane Street Groundwater Contamination Site, Elkhart, Indiana" (EPA I.D. #INN000510229)

Dear Mr. Petroff:

This letter responds to statements in your letter dated November 30, 2012, to Leslie Blake of U.S. EPA, Region V regarding trichloroethylene ("TCE") groundwater contamination associated with the Lane Street "Superfund" Site in Elkhart, Indiana, EPA ID # INN000510229.

Flexsteel Industries, Inc. ("Flexsteel") briefly conducted business at two (2) properties in the industrial park located north of Lane Street: 3507 Cooper Drive and 2503 Marina Drive ("the former Flexsteel properties"). Your letter to EPA does not mention the 3507 Cooper Drive property at all, which would suggest IDEM does not believe there is a source of contamination on this property. However, the letter states that IDEM believes a source is located north of Cooper Drive, while at the same time speculating about the potential for an additional source at the 2503 Marina Drive property. This speculation, which is not accompanied by any explanation, does not appear to be based on a full evaluation of the currently available data. Additionally, your November 30th letter provided no plans or suggestions regarding future data collection activities that may corroborate or disprove these speculative statements.

In regard to source determination, IDEM's Remediation Closure Guide (March 22, 2012) states "*there is no standard approach to demonstrating that contamination arises from an off-site source. Each demonstration is inherently site-specific and IDEM will evaluate each demonstration on its merits. However, IDEM expects that successful demonstrations will typically employ the CSM approach and multiple lines of evidence (LOEs).*" Using multiple LOEs, described within current and previous IDEM guidance documents pertaining to site investigation and source identification, the extensive data available to IDEM confirms that the former Flexsteel properties are not source(s) of the Lane Street area contamination.

ROBERTS, on behalf of Flexsteel and in cooperation with IDEM, has voluntarily conducted extensive soil and ground water investigation activities at the former Flexsteel properties and other areas hydrogeologically upgradient and downgradient of these properties. Flexsteel requests that IDEM confirm, in writing and incorporating multiple LOEs while evaluating the data, that the properties located at 3507 Cooper Drive and 2503 Marina Drive are not current or historical source(s) of the Lane Street area contamination. The following discussion will outline the basis for this request.

1.0 BACKGROUND

IDEM conducted preliminary screening activities throughout the Lane Street Groundwater Contamination Area in April 2008 as part of the 'Superfund" process, while ROBERTS conducted investigation activities in this area from March 2011 through October 2012. U.S. EPA investigation results have not yet been fully released to the public. In cooperation with IDEM/EPA efforts to identify the source of the Lane Street contamination, Flexsteel has shared all of the sampling data collected by ROBERTS with IDEM/EPA. The following background briefly highlights the results of the investigations.

1.1 IDEM Investigation Activities

IDEM conducted a soil and ground water screening investigation within the Lane Street Groundwater Contamination Site in April 2008. IDEM utilized a mobile laboratory and also submitted samples to an accredited off-Site laboratory for analysis.

Groundwater screening samples were collected via a Geoprobe screen point system and were based on pre-determined depths utilizing geologic boring logs and cross-sections provided by Geocel Corporation in conjunction with a nearby site of contamination. The depths of the groundwater samples generally corresponded to 8.0-feet below surface grade ("bsg"), 18-feet bsg, and 30-feet bsg. If groundwater was not encountered at 8.0-feet bsg, deeper samples were collected. Several groundwater samples exhibited detections of contaminants of concern ("COCs"), primarily trichloroethylene ("TCE"), throughout the study area "*although the highest levels of contamination were generally found in samples collected from the intermediate (18 ft) depth interval.*" (HRS Documentation Record, dated December 5, 2008 – Attachment A).

IDEM's shallow ground water samples with field duplicates E2Q42/E2Q46 (allegedly collected at 8ft) and E2Q01/E2Q95 (13ft) collected on the southwest portion of 2503 Marina Drive contained 55 & 47 micrograms per liter ("ug/l") and 84 & 110 ug/l TCE, respectively. Note that IDEM "Sample Field Sheets" (Attachment B) do not provide a "screened at" depth or a "sampled at" depth for sample E2Q42 or its field duplicate E2Q46. Intermediate ground water samples collected at these same locations, E2Q41 (18ft) and E2PP2 (23ft), contained 410 ug/l and 420 ug/l TCE, respectively. These IDEM sample locations also correspond to ROBERTS permanent monitoring well locations MW-14 and MW-15, which were non-detect for TCE in the shallow zone and contained similar elevated concentrations in the intermediate zone (see ROBERTS Summary of Ground Water Analytical Results provided in Attachment C).

Soil samples were collected by IDEM at nine (9) locations, which included six (6) soil samples collected on the former Flexsteel properties. Four (4) of these soil samples (plus one field duplicate) were collected west and southwest of the building located at 2503 Marina Drive from depths of 8.0-feet bsg (3 samples), 9.0-feet bsg, and 6.0-feet bsg. According to IDEM's former Risk Integrated System of Closures ("RISC") guidance document (Section 3.4.3), "*three borings per ½-acre source area meet screening needs.*" All nine (9) of these soil samples contained no detections of contaminants of concern ("COCs"). Boring logs prepared by IDEM personnel as part of the soil sampling indicate sands with 25% silt to depths of approximately 3.5-feet bsg and

sands with 15% silt to depths of approximately 8.0-feet bsg near the southwest corner of the building located at 2503 Marina Drive (E2Q50/E2Q51 logs in Attachment B).

In the HRS Documentation Record (December 5, 2008), IDEM concluded that "*this area* [southwest portion of 2503 Marina Drive] *cannot be definitively identified as a source for the contamination. Additionally, ground water contamination in the deeper parts of the aquifer was identified north (upgradient) of this area, so the available data suggests that deep zone contamination from an upgradient source is migrating into the study area.*" The HRS Documentation Record dated April 2009 (Attachment A) stated "*there is currently no available information that the following facilities may be the source(s) of the ground water contamination*" and then listed 3507 Cooper Drive and 2503 Marina Drive among these facilities.

1.2 ROBERTS Investigation Activities

ROBERTS performed geologic borings before collecting vertical aquifer screening ("VAS") ground water samples and installing permanent monitoring well clusters. The VAS geologic borings included a geologic boring north of Cooper Drive, a geologic boring at the 3507 Cooper Drive property, and a geologic boring at the 2503 Marina Drive property. Individual geologic borings were also advanced at each of the fifteen (15) monitoring well cluster locations.

Through these ground water sampling activities, ROBERTS identified chlorinated solvent ground water contamination along a consistent centerline core from north of Cooper Drive (MW-13 location) through south of 2503 Marina Drive (MW-12 location). The primary area of distinct shallow ground water contamination was identified north of Cooper Drive in MW-13s (screened from 3-13 feet bsg) with blackish staining identified in saturated soil from 11 to 12-feet bsg (well log provided in Attachment B). A total of 93 ug/l chlorinated solvent contamination, expressed as 59 ug/l tetrachloroethylene-PERC and 34 ug/l TCE, was identified in the ground water sample collected from this well. It is commonly understood that staining within saturated soil is typically encountered within or near source areas.

Between March 2011 and October 2012, ROBERTS collected a total of 194 ground water samples, which included 54 permanent monitoring wells, and 298 soil samples (see map of locations in Attachment D). In order to assess allegations of releases on the 2503 Marina Drive property, all 298 soil samples were collected on this property with 288 of these collected on the southwest portion of the property and 10 collected within a loading dock trench drain situated along the eastern exterior of the northern portion of the building. A total of 282 of these soil samples were collected using systematic grid sampling via 94 soil borings on the southwestern portion of the Site. Three (3) soil samples were collected at multiple consistent depths from each of the 94 soil borings, including: 6.0-inches to 12-inches bsg, 2.0 to 2.5-feet bsg, and 3.5 to 4.0-feet bsg. All of the samples were submitted for analysis of VOC contaminants of concern (1,1-dichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,1-dichloroethylene, methylene chloride, tetrachloroethylene, 1,1,1-trichlroethane, 1,1,2-trichloroethane, trichloroethylene, and vinyl chloride). No detections of COCs were identified in any of the 298 soil samples.

A total of 21 shallow ground water samples were collected on/near the 3507 Cooper Drive

property and a total of 20 shallow ground water samples were collected on the 2503 Marina Drive property. None of these shallow ground water samples exhibited TCE or PERC concentrations at or above their screening levels of 5.0 ug/l (i.e., all were non-detect except for one sample at 2.5 ug/l TCE at MW-11is, which was screened below the water table at 7.9 to 10.4-feet bsg). Clean shallow ground water samples were identified north, south, east, west, and southwest of the building located at 2503 Marina Drive and 3507 Cooper Drive. Intermediate zone groundwater contamination was identified beneath and south of the former Flexsteel properties within a consistent centerline core that gradually widened in a south-southwesterly direction (i.e., the direction of ground water flow in the area). Deeper zone ground water contamination was also identified beneath the southern portion of the 3507 Cooper Drive property, beneath the 2503 Marina Drive property, and south of these properties.

2.0 MULTIPLE LINES OF EVIDENCE

Using multiple lines of evidence ("LOEs") consistent with IDEM guidance, the data, as a whole, indicate the former Flexsteel properties are not a source(s) of the Lane Street Groundwater Contamination.

2.1 A Source of Contamination is Located North of Cooper Drive

As described in Section 1.2, chlorinated solvent ground water contamination was identified in the shallow aquifer zone (MW-13s) located north of Cooper Drive at a total chlorinated VOC concentration of 93 ug/l. Saturated soil staining, which is often encountered near source areas, was also identified at MW-13 at a depth of 11 to 12-feet bsg. Given this information, there seems to be agreement that a source of contamination is located north of Cooper Drive.

ECHD & IDEM virtual file cabinet ("VFC") records indicate significant usage of solvents and degreasers at 2601 Marina Drive, which is located north of Cooper Drive (former RE Jackson property – records provided in Attachment E). Both PERC and TCE have historically been identified in subsurface septic wastewater characterization samples at this property. Records for this property also indicate consistent storage of hazardous materials outside without secondary containment and historical discharges of degreasers to their septic system(s).

As shown in a 1986 aerial photograph provided in Attachment D, an open "courtyard" area at 2601 Marina Drive with exterior storage of materials is located north of Cooper Drive and directly upgradient of the centerline core of the Lane Street Groundwater Contamination area. What appears to be barren soil or gravel is located within the courtyard area. A subsequent 1993 aerial photograph (Attachment D) shows the courtyard "covered" with a new building addition, which would have effectively restricted further releases to the ground water from this area (i.e., the new building addition would act as a cap limiting additional migration to the ground water). This capping would, in effect, create a "slug" release scenario. No significant further ground water contamination would be added to the previous release(s) due to the building cap and clean, upgradient, ground water baseflow would "push" contaminant mass downgradient as a slug while at the same time leaving remnant contamination in its wake due to sorption.

The above information indisputably confirms, at a minimum, that a source of chlorinated solvent contamination is located north of Cooper Drive, which IDEM acknowledges in the November 30, 2012, letter to EPA. The exact location/magnitude of this source is still unknown. However, basic principles of hydrogeology would suggest that the source of contamination north of Cooper Drive would be located on a flowpath line analogous to the centerline core of contamination identified south of Cooper Drive. The former courtyard area of the 2601 Marina Drive building observed in the 1986 aerial is located along a northerly projection of this centerline core and this property is a site with known solvent/degreaser usage including documented solvent/degreaser discharges to the subsurface.

2.2 The Groundwater Contamination is Highly Zonal

In general, geology across the area consists of 6.0-inches to 3.0-feet of dark brown "topsoil" at the surface, followed by fine to medium sands with silt to depths of 4.0 to 8.0-feet bsg, followed by fine/medium sands with trace to 10% silt to depths of 12 to 19 feet, and the primary sand and gravel "intermediate zone" occurring anywhere from approximately 12 to 35 feet bsg. The exact depth to the intermediate zone varies based on surface elevation and downward or upward thinning/thickening of this zone across the study area. The horizontal flow within this intermediate aquifer zone is much greater than vertical flow to underlying zones. Hence, once ground water contamination enters this intermediate zone, it tends to stay within this zone for significant horizontal distances. These are the same hydrogeological characteristics identified at other known sites of ground water contamination in the area.

In summary, once the contamination enters the coarse intermediate aquifer zone, it stays within that zone for significant horizontal distances. The depth below surface grade to this intermediate zone varies depending on surface elevation and slight upward or downward thinning/thickening of this zone throughout the area. If this zone is penetrated by a well or screen point, the corresponding ground water sample will likely exhibit concentrations of contaminants that exceed cleanup levels. The magnitude of these concentrations will vary depending on the screened interval of the well or screen point. Wells or screen points that overlap the most contaminated areas within the intermediate zone will contain the highest concentrations, while wells or screen points that do not overlap the most contaminated areas, partially penetrate the intermediate zone, or are screened very close the intermediate zone will exhibit lower concentrations (i.e., diluted by a mixture of clean shallow ground water and contaminated intermediate zone ground water).

As shown in the following table, monitoring well clusters MW-10, MW-11, MW-14, and MW-15 (well logs provided in Attachment B) are examples of this zonal verticality.

MW I.D.		Screened Interval (feet bsg)	TCE (ug/l)	Depth to Intermediate Zone (feet bsg)
MW-10	MW-10s	3 - 13	ND	19-feet
	MW-10is	13 - 15.5	ND	
	MW-10iu	15.2 - 20.2	**87**	
	MW-10i	25 - 30	**100**	
MW-11	MW-11ss	2.75 - 7.75	ND	13 to 13.75-feet
	MW-11is	7.9 – 10.4	2.5	
	MW-11s	3 - 13	**100**	
	MW-11iu	11.4 – 13.9	**230**	
	MW-11i	24 - 29	**180**	
MW-14	MW-14ss	4 - 9	ND	14-feet
	MW-14is	12.8 – 15.3	**190**	
	MW-14iu	15 – 20	**180**	
	MW-14i	21 - 26	**250**	
MW-15	MW-15ss	5 – 10	ND	16.5-feet
	MW-15is	13.75 – 16.25	ND	
	MW-15iu	16.25 – 21.25	**92**	
	MW-15i	22 - 27	**190**	

ND = Not Detected at or above the laboratory reporting limit.
Bold results exceed 5.0 ug/l TCE.

The MW-11 well cluster provides a clear illustration of contaminant detection variations resulting from well screens partially penetrating or very near the intermediate zone. MW-11s was initially screened from 3.0 to 13-feet bsg. During installation, coarse sands and gravels were encountered at/near the bottom of this well and, as such, it was believed this well may have partially penetrated the intermediate zone. Given the subsequent detection of 100 ug/l TCE in this well after sampling and analysis activities, which was believed to be a mixture of the higher MW-11i concentration of 180 ug/l TCE and clean shallow ground water, well MW-11s was replaced by wells MW-11ss, MW-11is, and MW-11iu. These three (3) wells, fitted with smaller screened intervals than the original 10-feet of screen used with MW-11s, were specifically installed to evaluate these distinct zonal variations in TCE concentrations with depth. TCE concentrations at these three (3) wells demonstrated that TCE was not detected at or above 5.0 ug/l until the intermediate zone was punctured at MW-11iu, at which point 230 ug/l TCE was detected. This data indicates a lense of clean shallow ground water is present above the intermediate zone ground water contamination at this location.

As you will note in the preceding table, the depth to the intermediate zone varies and if a well screen fully penetrates the intermediate zone ("i" wells), it contains the greatest concentrations of TCE. Alternatively, if a well partially penetrates the intermediate zone (MW-10iu, MW-11s, MW-14is, MW-15iu), the resulting concentration of TCE is a mixture of clean shallow ground

water and more highly contaminated intermediate ground water. IDEM samples E2Q42/E2Q46 (allegedly collected at 8ft) with 55 & 47 ug/l, collected at the MW-14 location, and IDEM samples E2Q01/E2Q95 with 84 & 110 ug/l TCE (13ft), collected at the MW-15 location, are thus most likely mixtures of clean shallow ground water and contaminated intermediate ground water.

The above information demonstrates the discrete zonal variations in TCE concentrations are based on penetration within and/or vertical proximity to the intermediate aquifer zone. This provides a better understanding of the zonal hydrogeology than had previously been available, rather than simply relying on a generalized depth below surface grade across the entire area.

2.3 Clean Ground Water Lense Identified Across the Former Flexsteel Properties

An additional line of evidence ("LOE") shown by the table in Section 2.2 is a clean ground water lense above the intermediate aquifer zone beneath the former Flexsteel properties. A total of 21 shallow ground water samples were collected on/near the 3507 Cooper Drive property and a total of 20 shallow ground water samples were collected on the 2503 Marina Drive property. None of these 41 shallow ground water samples exhibited TCE or PERC concentrations at or above their screening levels of 5.0 ug/l. The data indicates no detections of TCE in each of the four (4) shallow water table wells (MW-10s, MW-11ss, MW-14ss, and MW-15ss) ranging in depth from 7.75-feet to 13-feet bsg; two (2) additional shallow wells (MW-10is and MW-15is) with depths of 15.5-feet and 16.25-feet bsg screened below the top of the water table; and another well screened below the top of the water table (depth of 10.4-feet bsg) exhibiting a trace detection of TCE below the screening level of 5.0 ug/l (MW-11is). Clean shallow ground water samples were identified north, south, east, and west of the buildings located at 2503 Marina Drive and 3507 Cooper Drive, including on the southwestern portion of the 2503 Marina Drive property. The data confirm a consistent, clean, shallow ground water lense across the former Flexsteel properties.

2.4 No Soil Contamination Identified at 2503 Marina Drive

According to Section 1.1.4 of IDEM's RISC Guidance Document, "*Source area (source) is defined as the horizontal and vertical geographical area that exceeds default residential soil closure levels."* EPA guidance (*Guidance on Choosing a Sampling Design for Environmental Data Collection*, 2002) further states that grid sampling is appropriate for identifying source zones or hot spot contamination. IDEM RISC Guidance also suggests "*three borings in a ½-acre source area meet screening needs*" for subsurface soil, while area screening tests for surface soils consist of "*dividing each source area into four sections*" and then "*take three random samples per section for a total of 12 samples*". Another common method for determining sample population size across a suspect area is the cube root method, which is simply calculating the cube root of the surface area to be investigated (based on a theoretical 1.0-ft by 1.0-ft grid laid across the suspect area). This calculation results in a recommended 23 borings across the 12,000-square feet (0.28-acre) area that encompasses the southwestern portion of the 2503 Marina Drive property.

Although no documented significant usage of TCE has occurred at the former Flexsteel properties, it is alleged that a source of the contamination may be located at/near the southwestern exterior of the building at 2503 Marina Drive. Therefore, ROBERTS installed 94 soil borings and 2 additional VAS borings in a grid pattern across this entire area and collected 3 soil samples at multiple consistent depths for a total of 288 soil samples on the southwest portion of the property. As described in Section 1.0, a total of 298 soil samples collected a various depths (6.0-inches to 4.0-feet bsg) exhibited no detections of contamination on the 2503 Marina Drive property. The vast majority of these samples (288) were collected within the alleged source area on the southwestern portion of the 2503 Marina Drive property. Additionally, four (4) soil samples (plus one field duplicate) collected by IDEM at deeper depths (6.0 to 9.0-feet bsg) on the southwestern portion of the 2503 Marina Drive property also exhibited no detections of contamination.

ROBERTS advanced over 31 times more borings than suggested by IDEM Guidance for subsurface soil screening and over 7 times the number of borings suggested by IDEM for surface soil screening. Additionally, ROBERTS advanced more than 4 times the number of borings across the area using the more stringent cube root method of determining a representative sample size.

As described in Section 1.0, both IDEM and ROBERTS data indicate silty fine to medium sand soils across the former Flexsteel properties from surface grade to 3.0 to 8.0 feet bsg, including some topsoil near the surface. It is widely accepted that finer grained soils such as silt and clays sorb the most contaminants. In order to have coincidental ground water contamination at or above the screening level of 5.0 ug/l for TCE, these finer grained soils would have sorbed contaminants at concentrations that exceed soil migration to ground water levels (37 micrograms per kilogram-ug/kg). Given the magnitude of contamination identified at the Lane Street Groundwater Contamination Site (i.e., orders of magnitude greater than 5.0 ug/l) the concentration of TCE released to the soil would have to greatly exceed the soil migration to ground water levels and significant soil contamination would remain. None of the over 300 soil samples collected by ROBERTS and IDEM on the 2503 Marina Drive property contained detectable concentrations of COCs, let alone the levels necessary to account for the detected ground water contamination. Using acceptable source area screening methods, the southwestern portion of the 2503 Marina Drive property was significantly "oversampled" by ROBERTS/IDEM and the data indicate that no source of TCE ground water contamination is located in this area.

2.5 Contamination Cannot Migrate from Point A to Point C without Impacts to Point B

It is fundamental that contamination cannot migrate from point A (unsaturated soil) to point C (intermediate to shallow intermediate ground water) without impacting point B (shallow water table ground water). This principle is particularly compelling when one considers the magnitude/mass of TCE required of a source to result in the extent of contamination observed within the Lane Street Groundwater Contamination area. Significant concentrations of residual shallow ground water contamination (i.e., multiples of the ground water screening level of 5.0 ug/l) would be identified near/downgradient of a source given the magnitude of impacts observed within the intermediate aquifer zone across the study area.

3.0 RESPONSE TO BULLET POINTS IN IDEM's LETTER

Considering the above, Roberts submits the following responses to the four (4) bullet points presented in IDEM's November 30, 2012, letter to EPA.

Bullet Point #1 and Bullet Point #2

In bullet point #1, IDEM references VAS ground water concentrations of 15.2 ug/l PERC and 7.2 ug/l TCE identified north of Cooper Drive rather than the significantly higher concentrations of 59 ug/l PERC and 34 ug/l TCE identified in MW-13s located north of Cooper Drive. It is a widely accepted industry standard that permanent monitoring well data, when available, is preferred over screening-level data. As such, referencing this lower "screening-level" data versus permanent monitoring well data is misleading. Additionally, the statement within IDEM bullet point #2 referencing an "*order of magnitude lower*" is also misleading given the higher PERC and TCE concentrations identified in the permanent monitoring well MW-13s.

While we all agree that at some location north of Cooper Drive is a source of the overall Lane Street Groundwater Contamination, IDEM states that it "*is likely related to the groundwater contamination identified at the southwestern corner of the 2503 Marina Drive property and in the former drinking water wells located along Lane Street.*" Given that the ground water contamination identified north of Cooper Drive lies along the same centerline core of ground water contamination south of Cooper Drive, it is not only likely, but actually highly probable that the a source of the overall Lane Street Groundwater Contamination Area is located north of Cooper Drive.

Additionally, you state in bullet point #1 that "*the groundwater contamination north of Cooper Drive is generally shallow in depth…although one of these samples contained PCE contamination at the 38-42 feet bgs depth interval.*" The VAS sample north of Cooper Drive with deeper PCE contamination (sample "GW-16 (40)") was located approximately 500-feet west of the MW-13s location and does not appear to be associated with the Lane Street Groundwater Contamination Area. Conversely, the VOCs identified in VAS samples GW-6 and GW-7 (and MW-13s) were only detected in the shallower portion of the aquifer and were also in alignment with the centerline core of ground water contamination identified south of Cooper Drive.

IDEM also states within bullet point #1 that "*additional investigation south of Cooper Drive identified TCE groundwater contamination in the 22-26 feet bgs depth interval, which suggests that the groundwater contamination is sinking as it migrates downgradient.*" As described in Section 2.2, the TCE ground water contamination is highly zonal and the absences of data between 13 feet bsg and 22-feet bsg north of the southwestern portion of the 2503 Marina Drive property is simply a data gap and does not show the contamination is sinking. Once the ground water contamination enters the intermediate aquifer zone, the data indicates that it tends to stay within this zone for significant horizontal distances.

ROBERTS initially sampled within the 22-36 feet bsg depth zone from north of Cooper Drive to

south of 2503 Marina Drive in order to evaluate the potential connectivity of TCE ground water contamination identified beneath and south of the 2503 Marina Drive property to contamination identified north of Cooper Drive. Many of the wells installed at the southwest corner of 2503 Marina Drive served a different purpose: as shown in Section 2.2, ground water wells installed on the southwestern portion of the 2503 Marina Drive property were specifically installed to illustrate the vertical zonal differences in TCE ground water contamination. Similar to well MW-1is located on the northern portion of the 3507 Cooper Drive property, which identified both PERC and TCE contamination from 13.5 to 18.5-feet bsg, ground water samples collected between 13-feet bsg and 22-feet bsg north of the southwestern portion of the 2503 Marina Drive property (i.e., depth at which no wells were installed) will likely also exhibit TCE contamination if the screened interval of the well or screen point penetrates the intermediate aquifer zone at that specific location.

Bullet point #2 states that in order for the source of contamination north of Cooper Drive to be the "*sole source*" of the contamination "*it would have been necessary for the center of mass of the contaminant plume to have migrated at least 1,000 feet from the source area.*" As described in sections 1.0 and 2.0, the intermediate aquifer zone consists of coarse sands and gravels and the horizontal flow within this zone is much greater than the vertical migration between different aquifer zones. As such, once the contamination enters this zone, it can travel for thousands of feet downgradient, similar to the contaminant transport characteristics observed at other areas nearby.

While no significant contaminant transport modeling efforts have been conducted, simple one-dimensional modeling using EPA's On-line Tools for Site Assessment Calculation – "*Transport from a Continuing or Pulse Concentration Source*" calculator can reproduce similar results from the 2601 Marina Drive property to the center of mass of the impacts (approximate location of MW-12). This slug migration scenario has also been observed at other large chlorinated solvent ground water contamination sites (see Hopewell Precision Superfund Site, New York; former Orion Park Housing Area, Moffett Field, California; and others) that show a higher concentration slug migrating downgradient while simultaneously leaving a lower concentration "tail" of residual contamination in its wake.

Bullet Point #3

As described in Section 2.4, ROBERTS collected a total of 298 soil samples from multiple consistent surficial and subsurface depths (6.0-inches to 4.0-feet bsg) at the 2503 Marina Drive property with no detections of COCs in any of the soil samples. IDEM also collected four (4) deeper soil samples (6.0-feet to 9.0-feet bsg) with one (1) field duplicate on the southwestern portion of the 2503 Marina Drive property. No COCs were detected in any of these soil samples.

Nevertheless, IDEM states in bullet point #3 that these soil samples are "*good evidence that significant surface contaminant spills did not occur in this area, it does not on its own rule out the potential for a release at that property.*" However, IDEM's *Remediation Closure Guide* states that IDEM expects multiple LOEs to be evaluated, rather than one line of evidence such as soil sampling "on its own" will be used to evaluate potential source areas. ROBERTS has

demonstrated, through 194 groundwater samples, 54 of which were taken from permanent monitoring wells, that there is a clean lense of shallow ground water across the former Flexsteel properties in addition to clean surface and subsurface soil on the southwest portion of the 2503 Marina Drive property. It is therefore not clear why bullet point #3 in IDEM's letter appears to only consider surface soil data, rather than these multiple LOEs as required by IDEM Guidance to "rule out" the southwest portion of 2503 Marina Drive property as a potential source area. Additionally, the number of soil samples collected within the alleged source area on the southwestern portion of the 2503 Marina Drive property are significantly greater than the number of soil samples both IDEM and EPA recommend for identifying/screening surface and subsurface source areas or hot spots, not just surface releases. Using IDEM and EPAs own guidance and multiple LOEs, this area would be (and should be) clearly ruled-out as a potential surficial and subsurface source area with no contribution to the Lane Street Groundwater Contamination.

IDEM goes on to speculate, without reference to any supporting data, that "*it is possible that a release could have occurred underneath the building located at the property*". If a source were located underneath the building, shallow ground water would be impacted. However, as discussed in Section 2.3, a lense of clean shallow ground water has been identified all around the building located at 2503 Marina Drive (north, south, east, west, and southwest of the building). Contamination cannot migrate from point A (soil) to point C (intermediate to shallow intermediate ground water) without impacting point B (shallow water table ground water), particularly given the magnitude required of a source to result in the extent of contamination observed with the Lane Street Groundwater Contamination area. In this case, the available data does not indicate contamination at either point A (soil) or point B (shallow water table). In addition, ROBERTS has conducted VAS sampling and installed permanent monitoring wells encircling and abutting the building at 2503 Marina Drive. No COCs have been detected in the shallow samples taken at these points. Given the multiple LOEs, speculation that a source is located underneath the building is unjustified. Please identify the factual or scientific basis of this speculation or withdraw this statement.

The additional speculation in bullet point #3 that a source area of this magnitude would have been "*attenuated via storm water infiltration and/or evaporation*" is illogical given the magnitude of the contamination observed at the Lane Street Groundwater Contamination Area. As previously discussed, soil in the area consists of topsoil near the surface and sands with 15% to 25% silt down to depths of 8.0-feet bsg. Silts would sorb contaminants and leave residual concentrations of contaminants at concentrations significantly greater than the migration to ground water screening levels. If this speculation were true, simple heavy rains and/or drought conditions would effectively remediate all moderate to small instances of VOC soil contamination across the entire United States and we know this is not the case. If contamination at 2503 Marina Drive were completely "*attenuated via storm water infiltration and/or evaporation*" with no trace remaining, then it would not have been significant enough to contribute to the Lane Street Groundwater contamination in the first instance. Please either cite specific scientific evidence that supports this speculation or withdraw this statement.

Bullet Point #4

Given the above soil and ground water analysis, the discussion in Section 2.2 regarding the zonal nature of flow across this portion of Elkhart, IDEM's speculation that a "*shallower source of contamination may be located on the southwestern portion of that property*" is not substantiated when considering the multiple LOEs. IDEM's identification of differences between TCE detections at the location of the MW-10 cluster versus the location of the MW-14 cluster in bullet point #4 appears to be based on nothing more than vertical depth at which several wells were installed, without consideration of the different geology at these two points or any of the data concerning clean soil or clean shallow ground water both at, and in between, the locations of the MW-10 and MW-14 well clusters.

Monitoring well MW-10s (3-13 feet bsg) and MW-10is (13-15.5 feet bsg) are both constructed entirely above the intermediate zone. Consequently, no COCs were detected in either of these wells above 5.0 ug/L. In contrast, only monitoring well 14ss (4-9 feet bsg) was installed above the intermediate zone at that location. Monitoring well MW-14is (12.8-15.3 feet bsg) was specifically drilled into the coarse aquifer zone while at the same time having a screened interval at or above 13.0-feet bsg. MW-14is was intentionally constructed this way, along with shallower well MW-14ss, to illustrate the zonal nature of the contamination and to assess the possibility that IDEM samples E2Q42/E2Q46 collected at the same spot did not accurately represent the shallow ground water conditions at this location. Sampling results from MW-14ss and MW-14is confirmed the zonal nature of the contamination: no COCs were detected in MW-14ss, whereas 180 ug/l of TCE was detected in the well intentionally constructed to puncture the intermediate zone, MW-14is. Similarly, monitoring well cluster MW-15 was also intentionally constructed to illustrate the zonal nature of the contamination and to assess the possibility that IDEM samples E2Q01/E2Q95 collected at the same spot did not accurately represent the shallow ground water conditions at this location. Sampling results from MW-15ss, MW-15is, MW-15iu, and MW-15i confirmed the zonal nature of the contamination: no COCs were detected in MW-15ss and MW-15is, whereas 92 ug/l of TCE was detected in MW-15iu that partially penetrated the intermediate zone and 190 ug/l of TCE was detected in MW-15i that fully penetrated the intermediate zone. Similar results have been shown at the MW-11 location, as more fully described in Section 2.2.

In summary, the data indicates that contamination is identified at a <u>shallower depth</u> at MW-14 than MW-10 (difference of 2.4-feet between the top of screen at MW-10is and MW-14is). However, using multiple LOEs, the data does not indicate a <u>shallower source</u> on this portion of the 2503 Marina Drive property. Instead, it shows (as the wells at these locations were intentionally constructed to evaluate) that puncturing into the intermediate zone will result in detections of COCs above clean-up levels. Using the multiple LOEs discussed throughout this report and in particular:

- the zonal nature of the ground water contamination;
- several hundred clean soil samples within this same area ranging in depths from 6.0-inches to 9.0-feet bsg, including hundreds of soil samples between MW-10 and MW-14;
- contamination cannot migrate from point A (soil) to point C (intermediate ground water)

without impacting point C (shallow water table aquifer);
- clean shallow ground water lense identified above the intermediate aquifer zone across the former Flexsteel properties, including at the MW-14 location;

the data refute the speculation that "*shallower source of contamination*" is located at the southwestern portion of this property. Rather, the contamination is simply only identified at a slightly shallower depth, but still associated with the intermediate aquifer zone.

CONLUSIONS

Flexsteel has voluntarily invested significant time and resources over more than a 2-year period assisting IDEM and EPA with their investigation and, if necessary, is still willing to cooperate with IDEM/EPA. However, the available soil and ground water sampling data, evaluated using multiple lines of evidence ("LOEs"), clearly indicates the former Flexsteel properties are not source(s) of the Lane Street Groundwater Contamination. If IDEM or EPA feel otherwise, please describe what additional information or data would be needed to further demonstrate the former Flexsteel properties are not source(s) of contamination connected with the Lane Street Groundwater Contamination Area.

Flexsteel requests that the letter dated November 30, 2012, from IDEM to EPA be formally retracted in writing while IDEM reconsiders its assertions in light of this analysis. At a minimum, Flexsteel requests IDEM correct the prior errors, including removing speculative statements from the previous letter that contradict the significant volume of data collected to date and fail to consider multiple LOEs. Flexsteel requests that IDEM confirm, in writing and incorporating multiple LOEs while evaluating the data, that the properties located at 3507 Cooper Drive and 2503 Marina Drive are not current or historical source(s) of the Lane Street Groundwater Contamination.

Sincerely,
Roberts Environmental Services, LLC

David D. Jeffers, L.P.G
Senior Hydrogeologist

cc: Leslie Blake, U.S.EPA, Region V

Attachments:
A – HRS Documentation Records
B – Boring/Well Logs & Sample Field Sheets
C – ROBERTS Summary of Ground Water Analytical Results
D – Maps & Aerial Photographs
E – ECHD & IDEM Records – 2601 Marina Drive Property

ATTACHMENT A

HRS Documentation Records
December 5, 2008
& April 2009

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
INDIANAPOLIS

OFFICE MEMORANDUM

Date: December 5, 2008

To: Mark Jaworski
Site Investigations

Thru: Larry Studebaker, Chief
Geological Services Section

From: Kevin Spindler
Geologist
Geological Services

Subject: Hazard Ranking System Documentation Record
Lane Street Ground Water Contamination Site
Elkhart, Elkhart County
Site #7300081

SITE REVIEW

In response to your request, I have conducted a review of the existing literature and primary geological records available for the Lane Street Ground Water Contamination Site. I have the following comments:

STUDY AREA

The study area is located in the city of Elkhart in Elkhart County, Indiana. The area investigated is generally bounded by Cooper Drive to the north, Ada Drive to the west, and Marina Drive to the east. The investigation also proceeded into the residential area south of County Road 106, with sampling of residential wells on Lane Street, Timothy Court, Kershener Lane, and Barkley Street. The site is within Township 38 North, Range 5 East, Section 26 (USGS, 1994). The ground surface at the site slopes gently to the south, and topographic maps for the area show that there is 5 ft or less of relief across the site (USGS, 1994). As a result, samples collected from similar depths will have similar elevations and be directly comparable.

REGIONAL BACKGROUND

The St. Joseph Aquifer system has been contaminated locally by hazardous materials from the Lane Street Ground Water Contamination Site (IDNR, 1987, pp. 43, 45). The site is located in the Kankakee Outwash and Lacustrine Plain of the Northern Moraine and Lake Region physiographic unit in northern Indiana (USGS, 1992, p. 26). Unconsolidated deposits in this area consist of thick units of Wisconsinan-aged glacial outwash deposits that were left by ice advances of the Saginaw and Erie Lobes approximately 15,000 years ago (USGS, 1992, p, 27). Because of the thick deposits of transmissive aquifer material and the relatively high precipitation rate of the Great Lakes region, the St. Joseph Aquifer system is capable of producing over 1000 gallons per minute from properly constructed wells (IDNR, 1987, pp. 44-45). The St. Joseph Aquifer has been designated a sole-source aquifer by the EPA (USEPA, 1988).

Reference: 5

0001 A

HYDROSTRATIGRAPHY OF STUDY AREA

Unconsolidated Stratigraphy

Glacial outwash is usually overlain by a veneer of topsoil in the Elkhart area (USGS, 1981, p. 15). Soils at the site have been classified as "Plainfield fine sand, 0-2% slopes", which is described as "deep, excessively drained and somewhat excessively drained, coarse-textured soil that developed in sandy outwash" (USDA, 1974, pp. 24-26, and Plate 7). The soils are up to 60 inches thick and have a very high permeability (>20 inches per hour). Varying amounts of fill material (up to approximately 10 ft thick) have also been observed in soil boring logs in the area (IDNR, 2008a)

Approximately 170 ft of glacially-derived unconsolidated deposits are present between the Devonian and Mississippian-aged shale bedrock units of the Antrim and Ellsworth Formations (at an elevation of approximately 600 ft) and the ground surface (at an elevation of around 770 ft) (USGS, 1992). In the Elkhart area, most of this glacial material is coarse-grained, although some fine-grained till is also observed in the subsurface. In the vicinity of the site, an unconfined surficial aquifer consisting of sand and gravel units extends to a depth at least 50 ft below the ground surface. The upper aquifer and a lower, confined, sand and gravel aquifer that extends to the bedrock surface; are separated by a confining unit that is generally between 0 and 50 ft thick across the northwestern part of the county (USGS, 1998, p. 7). The confining unit is absent at the Lane Street Ground Water Contamination Site, so the surficial aquifer consists of a single sand and gravel unit that extends to bedrock (IGS, 2008b). Using data from available IDNR well logs, the Indiana Geological Survey (IGS) has prepared a database (iLITH) recording the thickness of different unconsolidated strata throughout Indiana (IGS, 2008b). This allowed the preparation of Figure 1, which shows the single unconsolidated aquifer beneath the Lane Street Ground Water Contamination Site.

Site-specific data collected from soil borings advanced at the Lane Street Ground Water Contamination Site as part of this investigation show that geologic materials in the upper 30 ft of the aquifer range from fine, silty sand to well-sorted gravel (please refer to Appendix A for the boring log for boring G, from which samples E2Q31, E2PY3, and E2Q37 were collected). No clayey material was encountered in IDEM's site investigation.

A full geologic investigation also took place at the Geocel site, which is located immediately east of the Lane Street Ground Water Contamination Site. Geocel entered into IDEM's Voluntary Remediation Program (VRP) in 2007 to remediate an extensive plume of ground water contamination that resulted from the release of PCE into the subsurface. Approximately 72 soil borings and 119 monitoring wells have been installed on and around the Geocel site as part of the investigation into the nature and extent of that contamination (Roberts Environmental Services, 2008). The majority of these borings were less than 60 ft deep and only encountered sand and gravel units. However, thin clay deposits (generally less than 5 ft thick) were found at depths of around 140 ft in the three deepest borings advanced during this investigation (BG-1, ECMT, and WCMT). Bedrock was encountered in BG-1 at a depth of around 200 ft.

Bedrock

The Ellsworth Shale forms the lower boundary of the St. Joseph Aquifer underneath the study area. Similar bedrock formations underlie the complete Indiana portion of the St. Joseph River basin (IDNR, 1987, pp. 15-16). The shale is likewise believed to be an aquiclude within the study area, and from IDNR well records, no water wells are known to be screened within it or below it in the study area.

Unconsolidated Hydrogeology

Hydraulic conductivity values for the aquifers are estimated (by calibrated ground water flow models) to be on the order of magnitude of 10^{-1} to 10^{-2} cm/s (USGS, 1998. p. 25). The depth to ground water in Elkhart County ranges from 6 to 15 ft below the ground surface. Regional ground water flow is generally to the south, towards the St. Joseph River, which is located approximately 1.4 miles south of the Lane Street Ground Water Contamination Site. At the time of IDEM's sampling event, ground water was present at depths of 6 to 7 ft (please refer to Appendix B for a copy of the field sheet). Data from IDEM's investigation determined that the direction of ground water flow was to the south-southwest, with a hydraulic gradient of 0.0015 ft/ft (Appendix B). Slug testing of the shallow part of the aquifer as part of the investigation of the nearby Geocel site yielded a hydraulic conductivity of approximately 100 ft/day (3.5×10^{-2} cm/s) to 375 ft/day (1.3×10^{-1} cm/s) (Roberts Environmental Services, 2008, pp. 15-16). Assuming that the hydraulic conductivity of the aquifer at the Lane Street Ground Water Contamination Site is similar to the conductivity at the nearby Geocel site, the ground water flow velocity in the upper aquifer is on the order of 0.54 ft/day to 2.0 ft/day (Appendix B).

Ground Water Usage

Ground water usage is high in the vicinity of the site. All of the homes in the residential area on the southern part of the site, as well as many of the businesses north of the site, utilize ground water from private wells as their only water source. The majority of the private wells are screened in the surficial sand and gravel unit less than 35 ft below the ground surface. It should be noted that well logs could not be located for all of the private wells located near Lane Street, including wells that were sampled as part of this investigation. A search of the IDNR water well database for private water wells in Township 38 North, Range 5 East, Section 26 shows that the private wells in that section range in depth from 23.9 to 58 ft below the ground surface (summary information for 100 of these wells is located in Appendix C). Therefore, it can be assumed that the wells of unknown depth that were sampled in this investigation were screened somewhere between 23.9 and 58 ft in depth. The site is located approximately 2.5 miles northwest of the City of Elkhart municipal water wells and is well outside of the 10-year time of travel well head protection area. Note that these municipal water wells are generally screened less than 60 ft below the ground surface in the same surficial aquifer as the one impacted in the Lane Street Ground Water Contamination Site.

IDENTIFIED CONTAMINATION IN THE SURFICIAL AQUIFER

From April 14 to April 17, 2008, a Geoprobe® was used to install temporary ground water sampling points at twenty six locations in the vicinity of the Lane Street Ground Water Contamination site. Ground

water samples were generally collected from depths of 8 ft (corresponding to the position of the water table), 18 ft, and 30 ft below the ground surface, except when ground water was not encountered at 8 ft, or topographic concerns required modification of the sampling plan. Concurrent with the Geoprobe ® investigation, water samples were also collected from 41 private wells owned by residents and businesses in the vicinity of the Lane Street Ground Water Contamination Site.

Several chlorinated volatile organic compounds (VOCs) were detected in many of the samples obtained. Elevated levels of trichloroethylene (TCE) were detected in samples E2PP2, E2PP8, E2PP9, E2PQ1, E2PQ2, E2PQ3, E2PQ8, E2PR0, E2PR2, E2PS5, E2PS6, E2PS7, E2PT0, E2PT1, E2PT4, E2PT5, E2PT6, E2PT7, E2PX3, E2PX4, E2PX6, E2PX7, E2PX8, E2PY5, E2PY6, E2PZ3, E2PZ4, E2PZ5, E2PZ6, E2PZ7, E2PZ8, E2PZ9, E2Q01, E2Q07, E2Q08, E2Q09, E2Q11, E2Q12, E2Q14, E2Q17, E2Q18, E2Q21, E2Q24, E2Q25, E2Q26, E2Q40, E2Q41, E2Q42, E2Q46, E2Q61, E2Q62, E2Q64, E2Q65, E2Q66, E2Q72, E2Q86, E2Q87, E2Q88, E2Q89, E2Q90, E2Q93, and E2Q95 at concentrations ranging from 0.11 to 770 µg/L. PCE was found in samples E2Q23, E2PR1, E2PQ9, E2Q72, E2Q62, and E2Q93 at concentrations ranging from 0.077 to 19 µg/L. Elevated levels of trans-1,2 DCE were found in samples E2PP6, E2PP8, E2PR0, E2PR7, E2PR8, E2PX6, E2Q40, and E2Q90 at concentrations ranging from 0.087 to 0.75 µg/L. Cis-1,2 DCE was present in samples E2PP6, E2PP8, E2PQ2, E2PQ8, E2PQ9, E2PR0, E2PR2, E2PR3, E2PR7, E2PR8, E2PT1, E2PT4, E2PZ3, E2Q14, E2Q26, E2Q40, and E2Q90 at concentrations ranging from 0.32 to 32 µg/L. Elevated levels of 1,1,1-TCA were found in samples E2PP2, E2PP8, E2PP9, E2PQ1, E2PR2, E2PS5, E2PS6, E2PS7, E2PT4, E2PT5, E2PT7, E2PX6, E2PX7, E2PX8, E2PY0, E2PY1, E2PY5, E2PY6, E2PZ3, E2PZ4, E2PZ5, E2PZ6, E2PZ7, E2PZ8, E2PZ9, E2Q01, E2Q08, E2Q09, E2Q24, E2Q25, E2Q41, E2Q42, E2Q46, E2Q62, E2Q64, E2Q65, E2Q84, E2Q89, E2Q90, E2Q93, and E2Q95 at concentrations of 0.16 to 57 µg/L. Elevated levels of 1,1-DCA were found in samples E2PP2, E2PP6, E2PP8, E2PQ2, E2PQ4, E2PQ8, E2PR0, E2PR2, E2PR6, E2PR7, E2PR8, E2PS5, E2PS6, E2PS7, E2PT0, E2PT1, E2PT4, E2PT5, E2PX3, E2PX6, E2PY0, E2PY5, E2PY6, E2PZ3, E2PZ4, E2PZ7, E2PZ8, E2PZ9, E2Q01, E2Q09, E2Q14, E2Q24, E2Q25, E2Q26, E2Q61, E2Q66, E2Q89, E2Q90, E2Q95 at concentrations ranging from 0.041 to 10 µg/L.

Chlorinated VOC contamination was found in ground water samples collected from all three depth intervals within the aquifer, although the highest levels of contamination were generally found in samples collected from the intermediate (18 ft) depth interval. Note that none of the samples collected from the shallow part of the aquifer (at the water table) north of E2PZ9 and E2Q01 contained significant levels of chlorinated VOCs. Soil samples were collected from the depth interval just above the water table at nine locations in the vicinity of shallow ground water samples E2Q63, E2Q01, and E2Q42. No detectable levels of soil contamination were found in the soil samples. This area cannot be definitively identified as a source for the contamination. Additionally, ground water contamination in the deeper parts of the aquifer was identified north (upgradient) of this area, so the available data suggests that deep zone contamination from an upgradient source is migrating into the study area. However, the vertical stratification of contamination in the aquifer at E2PZ9 and E2Q01 suggests that the contamination may have been caused by releases from multiple source areas.

The "core" of the contaminant plume trends to the south-southwest in the direction of ground water flow and is relatively narrow in width (approximately 300 ft as it crosses County Road 106, as bounded by E2PX3, E2PX4, and E2PX5 to the west and E2Q28, E2Q29, and E2Q37 to the east). A narrow plume of

chlorinated VOC contamination is expected, given the weak forces of dispersion that are typically present in sand and gravel aquifers (Pankow and Cherry, 1996, p.76').

A number of the groundwater grab samples collected in this investigation were collected upgradient and side-gradient of the areas of highest contamination and can be considered "background" samples to determine the concentration of chlorinated VOCs that are migrating into the Lane Street Ground Water Contamination study area. No chlorinated VOCs were found in the shallow part of the aquifer in samples E2Q92, E2Q60, E2Q63, and E2Q04; in the intermediate part of the aquifer in sample E2Q05; and in the deep part of the aquifer in samples E2Q96, E2PR4, E2PT8, E2Q99, E2Q06, and E2PR5.

As mentioned above, the release of PCE into the subsurface at the Geocel site, which is located immediately northeast of the Lane Street Groundwater Contamination Site, has resulted in an extensive plume of chlorinated VOC groundwater contamination that has impacted the domestic drinking water wells on Kershner Street. Geocel does not accept responsibility for the contamination found on Lane Street. Along the northern and western sides of their plume, Geocel has collected clean ground water samples from MW-1s, MW-1d, MW-13, MW-20D46, MW-23i, MW-34s, MW-34i, MW-34D46, MW-35i, MW-35D49, MW-36i, MW-36D49, MW-37s, MW-37i, MW-37D48, MW-38s, MW-38i, MW-38D48, MW-40i, MW-40D43, MW-42D40, MW-42D53, GP-16, GP-17, GP-18, and GP-19 (Roberts Environmental Services, 2008, Tables 4 and 5, and figure 9-11). Additionally, IDEM has collected clean ground water grab samples along the eastern edge of the Lane Street plume at E2Q28, E2Q29, E2Q30, E2Q31, E2PY3, E2Q37, E2Q83, E2Q84, and E2Q85, which seem to corroborate Geocel's data.

SUMMARY

An extensive plume of chlorinated VOC contamination has impacted the surficial glacial outwash aquifer that serves as the sole drinking water supply for the residents on Lane Street in Elkhart, Indiana. In an investigation conducted by IDEM in April 2008, ground water contamination was detected to depths greater than 30 ft below the ground surface.

No chlorinated VOCs were found in the shallow portion of the aquifer north of samples E2PZ9 and E2Q01, which contained significant levels of contamination at 8 ft. However, soil samples collected near E2PZ9 and E2Q01 showed no detectable levels of contamination, and a source could not be positively identified. Based on the stratification of the contaminants in the upper 30 ft of the aquifer, it appears an unidentified, upgradient source may be present, and that the contamination found in the Lane Street Ground Water Contamination Site could have resulted from multiple sources.

REFERENCES

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Indiana Department of Natural Resources (2008a) Water Well Records, retrieved from http://www.in.gov/dnr/water/ground_water/well_database/ .

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Indiana Geological Survey (2007a) A GIS Atlas for Indiana, accessed via http://129.79.145.7/arcims/statewide_mxd/index.html .

Indiana Geological Survey (2007b) iLITH database: clay thickness, accessed via http://129.79.145.7/arcims/statewide_mxd/index.html .

Pankow, J.F. and Cherry, J.A., 1996, Dense Chlorinated Solvents and other DNAPLs in Groundwater; Waterloo Press, Portland, Oregon; p. 76.

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United States Department of Agriculture, 1974, Soil Survey of Elkhart County, Indiana, p. 24-26.

United States Environmental Protection Agency (1988) Designated Sole Source Aquifers in EPA Region V, accessed via http://www.epa.gov/safewater/sourcewater/pubs/qrg_ssamap_reg5.pdf .

United States Geological Survey (1981) "Hydrologic and Chemical Evaluation of the Ground-Water Resources of Northwest Elkhart County, Indiana", Water-Resources Investigations Report 81-53.

United States Geological Survey (1992) "Hydrogeologic Atlas of Aquifers in Indiana", Water-Resources Investigations Report 92-4142.

United States Geological Survey (1994) Elkhart Quadrangle, Indiana, 7.5 Minute Series Topographic Map, revised from 1961 original, DMA 3867 III NW-Series V851.

United States Geological Survey (1998) "Geohydrology and simulated ground-water flow in northwestern Elkhart County, Indiana", Water-Resources Investigations Report 97-4204.

Attachments included

HRS DOCUMENTATION RECORD COVER SHEET

Name of Site: Lane Street Ground Water Contamination
EPA ID No.: INN000510229

Contact Persons

Site Investigation:
Mark Jaworski
Indiana Department of Environmental Management (IDEM)
Indianapolis, IN
(317) 233-2407

Documentation Record:
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IDEM
Indianapolis, IN
(317) 233-2407

Erica Islas
U.S. Environmental Protection Agency (EPA)
Chicago, IL
(312) 353-7209

Pathways, Components, or Threats Not Scored

The presence of volatile organic compounds (VOCs) above health benchmarks in the drinking water of private residential and commercial ground water wells is the primary pathway of concern (See Section 3.1.1 of this HRS documentation record). The surface water, air, and soil exposure pathways were not scored because based on the data available at the time, a release to these media did not significantly affect the overall site score and because the ground water pathway produces an overall site score above the minimum required for the site to qualify for inclusion on the NPL. These pathways may be of concern to IDEM and EPA and may be evaluated during future investigations.

Surface Water Migration Pathway

The most prominent surface water feature potentially subject to contamination in this area is the St. Joseph River which is located to the south of the known ground water contamination (Ref. 3, p. 0060). There are no identified drinking water intakes along the possible 15 mile target distance limit (Ref. 3, p. 041). Currently there are no state fish advisories posted for the VOCs that were detected during the investigations of this site (Ref. 3, p. 041). This pathway would minimally impact the overall site score.

Air Migration Pathway

There is insufficient data to establish an observed release of VOCs to the air pathway (Ref. 3, p. 042). Without an observed release, only the potential to release may be evaluated for this pathway. This pathway would minimally impact the overall site score.

Soil Exposure Pathway

The soil exposure pathway is not scored because data is not available at this time to document observed contamination for this pathway.

HRS DOCUMENTATION RECORD

Name of Site: Lane Street Ground Water Contamination Date Prepared: April 2009

EPA Region: 5

Street Address of Site:* Lane Street at County Road 106

City, County, State, ZIP: Elkhart, Elkhart County, Indiana 46514

General Location in the State: North Central Indiana in Elkhart County in the northeast sector of Elkhart, Indiana. The contaminated ground water is centered at the intersection of Lane Street and County Road 106. (Refs. 13; 14; 15; 16; 17; p. 6 of this HRS documentation record)

Topographic Map: Elkhart, IN

Latitude: 41° 43' 00.65" North Longitude: 85° 55' 15.62" West

References: 13; 25; p. 6 of this HRS documentation record

The coordinates above define the intersection of Lane Street and County Road 106 (Refs. 13; 25; p. 6 of this HRS documentation record).

* The street address, coordinates, and contaminant locations presented in this HRS documentation record identify the general area in which the site is located. They represent one or more locations EPA considers to be part of the site based on the screening information EPA used to evaluate the site for NPL listing. EPA lists national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. A site is defined as where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." Generally, HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will be refined as more information is developed as to where the contamination has come to be located.

Scores

Air Pathway	Not Scored
Ground Water Pathway	81.06
Soil Exposure Pathway	Not Scored
Surface Water Pathway	Not Scored
HRS SITE SCORE	40.53

WORKSHEET FOR COMPUTING HRS SITE SCORE

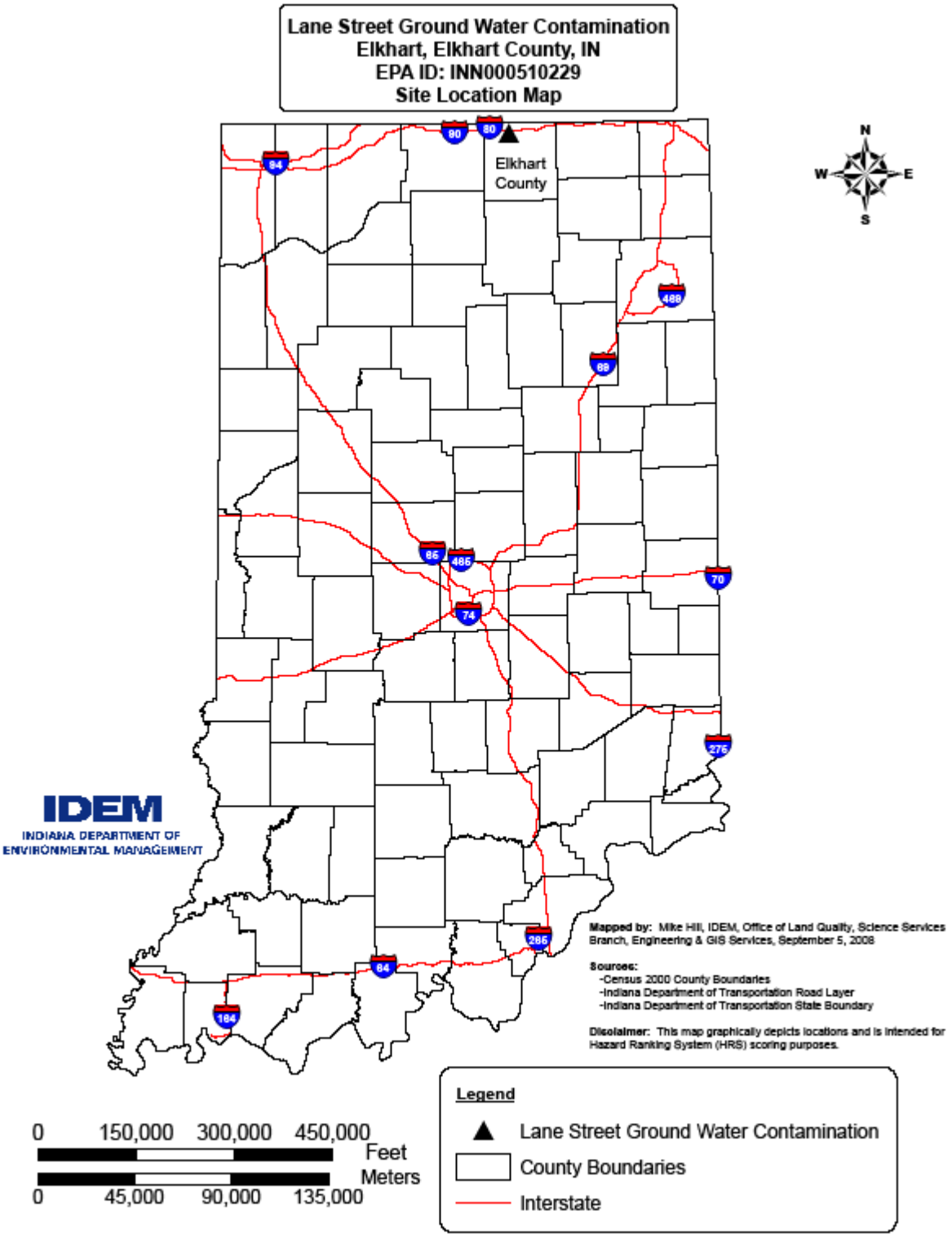
		S	S^2
1.	Ground Water Migration Pathway Score (S_{gw})	81.06	6570.7236
2a.	Surface Water Overland/Flood Migration Component (from Table 4-1, line 30)	Not Scored	Not Scored
2b.	Ground Water to Surface Water Migration Component (from Table 4-25, line 28)	Not Scored	Not Scored
2c.	Surface Water Migration Pathway Score (S_{sw}) Enter the larger of lines 2a and 2b as the pathway score.	Not Scored	Not Scored
3.	Soil Exposure Pathway Score (S_s) (from Table 5-1, line 22)	Not Scored	Not Scored
4.	Air Migration Pathway Score (S_a) (from Table 6-1, line 12)	Not Scored	Not Scored
5.	Total of $S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2$		6570.7236
6.	**HRS Site Score** Divide the value on line 5 by 4 and take the square root	40.53	

GROUND WATER MIGRATION PATHWAY SCORESHEET

REF.1, TABLE 3-1

Factor Categories and Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer:		
1. Observed Release	550	550
2. Potential to Release:		
2a. Containment	10	NS
2b. Net Precipitation	10	NS
2c. Depth to Aquifer	5	NS
2d. Travel Time	35	NS
2e. Potential to Release [lines 2a x (2b + 2c + 2d)]	500	NS
3. Likelihood of Release (higher of lines 1 and 2e)	550	550
Waste Characteristics:		
4. Toxicity/Mobility	a	10,000
5. Hazardous Waste Quantity	a	100
6. Waste Characteristics	100	32
Targets:		
7. Nearest Well	50	50
8. Population:		
8a. Level I Concentrations	b	330
8b. Level II Concentrations	b	
8c. Potential Contamination	b	
8d. Population (lines 8a + 8b + 8c)	b	330
9. Resources	5	NS
10. Wellhead Protection Area	20	NS
11. Targets (lines 7 + 8d + 9 + 10)	b	380
GROUND WATER MIGRATION SCORE FOR AN AQUIFER		
12. Aquifer Score [(lines 3 x 6 x 11)/82500][c]	100	81.06
GROUND WATER MIGRATION PATHWAY SCORE		
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evaluated)[c]	100	81.06

a Maximum value applies to waste characteristics category.
b Maximum value not applicable.
c Do not round to nearest integer.
NS Not Scored


Lane Street Ground Water Contamination
Elkhart, Elkhart County, IN
EPA ID: INN000510229
Site Location Map
Elkhart County
N
W
E
S
IDEM
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Mapped by: Mike Hill, IDEM, Office of Land Quality, Science Services Branch, Engineering & GIS Services, September 5, 2008
Sources:
-Census 2000 County Boundaries
-Indiana Department of Transportation Road Layer
-Indiana Department of Transportation State Boundary
Disclaimer: This map graphically depicts locations and is intended for Hazard Ranking System (HRS) scoring purposes.
0 150,000 300,000 450,000
Feet
0 45,000 90,000 135,000
Meters
Legend
Lane Street Ground Water Contamination
County Boundaries
Interstate

Lane Street Ground Water Plume Bounday Map
Defined by Chlorinated VOC's from Key Findings List &
Preliminary Assessment Ground Water Sampling Results
Elkhart, Elkhart County, IN
EPA ID: INN000510229

0 250 500 750 Feet
0 75 150 225 Meters

N
W E
S

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Legend

- Sample Locations
- Lane Street Gound Water Plume Boundary

Mapped by: Mike Hill, IDEM, Office of Land Quality, Science Services Branch, Engineering & GIS Services, September 11, 2006

Sources:
-2005 Indiana Orthophotography
(IndianaMap Framework Data www.indianamap.org)
-The ground water plume boundary was defined by drawing a line connecting the outer-most ground water sample locations with known detections of chlorinated VOC's based on the Key Findings List and the Preliminary Assessment Ground Water Sampling Results.

Disclaimer: This map graphically depicts locations and is intended for Hazard Ranking System (HRS) scoring purposes.

Lane Street Ground Water Contamination Map
Elkhart, Elkhart County, IN
EPA ID: INN000510229

0 400 800 1,200 Feet

0 100 200 300 Meters

N W E S

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Legend

× Indicates Approximate Center of Lane Street Ground Water Contamination

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Sources:
-Indiana Department of Transportation Road Layer
-2005 Indiana Orthophotography
(IndianaMap Framework Data www.indianamap.org)

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2.0 SITE SUMMARY

2.0.1 SITE DESCRIPTION

Lane Street Ground Water Contamination (CERCLIS ID INN000510229) is located near the intersection of Lane Street and County Road 106, in the northeast sector of Elkhart, Elkhart County, in north central Indiana. Lane Street Ground Water Contamination consists of a contaminated ground water plume with no identified source. The plume is characterized by privately-owned residential and commercial drinking water wells on Lane Street and north of the intersection of Lane Street and County Road 106 that meet the criteria for establishing an observed release for chlorinated volatile organic compounds (VOCs) (Refs. 3, p. 0761; 7, p. 15; 19, p. 014; and Section 3.1.1 of this HRS documentation record). Hazardous substances identified in the ground water include: 1,1,1-trichloroethane (1,1,1-TCA), trichloroethylene (TCE), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethylene (1,1-DCE), cis-1,2-DCE, trans-1,2-DCE, and tetrachloroethylene (PCE) (Section 3.1.1 of this HRS documentation record).

The area on Lane Street consists of only residential properties, and is bound to the north by County Road 106, to the east by Kershner Lane, to the south by other residential subdivisions, and to the west by farm land (Refs. 3, pp. 009, 010, 0755; 13; 27, p. 023). The area north of the intersection of Lane Street and County Road 106 is an industrial park that is comprised of numerous light industrial/commercial buildings and offices (Refs. 3, pp. 009, 010, 0755, 912; 13; 27, p. 023).

The ground surface in the area is relatively flat and slopes gently to the south. Topographic maps for the area show that there is 5 ft or less of relief across the site. As a result, samples collected from similar depths will have similar elevations and be directly comparable (Refs. 5, p. 0001A; 13).

The depth to ground water across this area is generally approximately 6 feet below ground surface (bgs) but varies between 2 to 12 feet bgs (Refs. 5, pp. 003, 025; 40, p. 888). The majority of the private drinking water wells in the area are screened in the sands and gravels of the St. Joseph Aquifer (Ref. 5, p. 003). Regional ground water flow is south-southwesterly toward the St. Joseph River (Refs. 3, p. 0767; 5, p. 003).

2.0.2 SITE HISTORY

Lane Street Ground Water Contamination was discovered during the investigation of contamination associated with the Geocel Corporation (Geocel) facility on Marina Drive, confined to an area bordered by Kershner Lane to the west, the Geocel facility to the north, County Road 113 to the east, and Crestwood Street to the south (Refs. 3, p. 0755, 19, p., 02). Geocel alerted IDEM and the Elkhart County Health Department (ECHD) about the ground water contamination associated with its operation and applied to IDEM's Voluntary Remediation Program (VRP) in June 2007 (Refs. 28, p. 001; 40, pp. 006, 880).

On August 22, 2007, the Site Investigation Section of IDEM received a call from the ECHD (Ref. 19, pp. 02, 08). The ECHD stated that a Lane Street resident had submitted a sample of the residence's drinking water to the Water Quality Laboratory at Heidelberg College in Tiffin, Ohio (Refs. 19, pp. 02, 08; 30, p. 001). Lane Street is located one street west of Kershner Lane (Ref. 3, p. 0755). The analysis of the water revealed highly elevated levels of TCE (1,360 µg/L) and breakdown products (Ref. 30, pp. 001 to 004; 80, p. 0001 through 0003).

On August 23, 2007, IDEM staff conducted a PreCERCLIS Screening which consisted of a visual site reconnaissance of the surrounding properties (Ref. 19, pp. 02, 08). All residents on Lane Street utilize private wells for drinking water (Ref. 39, p. 002). Numerous businesses and small industries are situated in the industrial park located north of County Road 106 (Refs. 3, pp. 009, 010, 0755, 912; 13; 19, p. 09; 27, p. 023).

Following this effort, Site Investigation staff sampled the ground water from seven private wells (along with a necessary duplicate and a trip blank) on and north of Lane Street including the residence that had phoned the ECHD with the elevated TCE concentration (Ref. 19, pp. 09, 010, 014). The samples were identified by LQ4537 through LQ4544 (Refs. 19, pp. 010 and 014; 21, p. 005). Analysis of the ground water samples revealed that the drinking water in four residential wells contained elevated levels of VOCs at concentrations above MCLs (Ref. 19, pp. 09, 010).

On August 30, 2007, IDEM conducted another sampling event on Lane Street as part of a Preliminary Assessment (Ref. 7, p. 001). Thirty nine water samples were collected which included necessary duplicates and a trip blank (Ref. 7, pp. 014, 016, 017, 018). The samples were identified by LQ4570 through LQ4579, LQ4581 through LQ4595, and LQ4597 through LQ4610 (Ref. 7, pp. 014, 016, 017, 018). Analysis of the water samples collected for this sampling event revealed that the drinking water from residential wells on Lane Street contained elevated levels of TCE and other VOCs (Ref. 7, pp. 022, 023, 027; Sections 2.2.2 and 3.1.1 of this HRS documentation record).

After the results of the water from the wells sampled were reviewed and found to be acceptable for use, IDEM's Office of Land Quality provided bottled water to those people whose water was found to contain elevated levels TCE (Ref. 18, pp. 001, 002). IDEM alerted EPA that some residential sample results for TCE had exceeded or were close to the MCL (Ref. 12, p. 001, 002). EPA confirmed elevated levels were present in residential wells, informed the residents, and provided filters to some residents (Refs. 11; 12, pp. 001, 002).

From April 14 through April 17, 2008, IDEM staff conducted a Site Inspection at the Lane Street Ground Water Contamination Site (Ref. 3, p. 020). Staff collected 132 ground water samples (Refs. 3, pp. 020 through 027; 4, pp. 001A, 004 through 014, 017 through 069, 071 through 093, 095 through 101, 103 through 106, 114 through 121, 123, 128 through 135, 137 through 143). Ground water samples were obtained from private wells and from discrete locations from an industrial park utilizing two direct push instruments (Refs. 3, pp.020 through 027; 4, pp. 001, 004 through 014, 017 through 069, 071 through 093, 095 through 101, 103 through 106, 114 through 121, 123, 128 through 135, 137 through 143). Staff also collected nine soil samples in an attempt to identify a source area (Refs. 3, pp. 031, 032, 0763; 4, pp. 070, 107 through 113, 122, 136). Staff also determined that ground water flow direction is toward the south to southwest, from the nearby industrial park toward Lane Street (Ref. 3, pp. 039, 0769).

TCE and other breakdown products were detected in 12 residential ground water samples collected during the April 2008 SI (E2PS5, E2PS6,E2PS7, E2PR0, E2PR2, E2PQ2, E2PQ8, E2PT0, E2PT1, E2PT4, E2PT5, E2Q14) (See Section 3.1.1 of this HRS documentation record). Samples E2PQ2 is a duplicate of E2PR0, E2PS7 is a duplicate of E2PS6, and E2PT4 is a duplicate of E2PT5 (Refs. 3, pp. 021, 022; 4, pp. 011, 019, 035, 036, 043, 044). TCE detections ranged from 1.3 µg/L to as high as 330 µg/L in these residential wells (Section 3.1.1 of this HRS documentation record). In an attempt to identify a source area, chlorinated VOCs were also detected in ground water samples that were obtained with direct push instruments from an industrial park in the area (Ref. 3, pp. 035 through 037, 0757, 0759; Section 3.1.1 of this HRS documentation record). No VOCs were detected in the soil samples collected (Refs. 3, pp. 032, 042, 0763; 4, pp. 070, 107 through 113, 122, 136; 20, pp. 613 through 621, 628 through 651).

Because the source of the chlorinated solvents has not been identified even after collecting many ground water and soil samples, IDEM staff conducted several reconnaisance visits at numerous facilities in the area to identify potential sources (Ref. 3, pp 015 through 019, 954 through 1028). In addition to the ground water contamination, EPA and IDEM are concerned about potential vapor intrusion into the residences of the area.

Level of Effort:

In September, 2007, IDEM staff conducted work for a PreCERCLIS Screening Assessment under CERCLA (Ref. 19, pp. 01A, 03, 05). In August 2007, IDEM staff collected eight (8) ground water samples from wells on and north of Lane St. (Ref. 19, pp. 09, 10, 14; 55, p. 01A). This work was completed to determine the presence of elevated levels of VOCs in drinking water (Refs. 19, pp. 02, 010; 55). A PreCerclis Screening is a review of information on potential NPL sites and is an initial low-cost look at potential sites (Ref. 60, p.01A).

Sample results from the August 2007 sampling event revealed elevated levels of TCE above MCLs (Refs. 19, pp. 02, 012, 015; 21, pp. 005, 011, 015, 017, 022, 024, 027, 41; 55, p. 01A). On August 30, 2007, IDEM staff conducted another sampling event (Ref. 56, p. 01A). This work was presented in a Preliminary Assessment (PA) under CERCLA (Ref. 7, p. 001). A total of 39 water samples were collected which included necessary duplicates and a trip blank for this second phase of the investigation (Refs. 7; 56, p. 01A). The purpose of the sampling was to determine the number of private drinking water wells that were impacted with elevated levels of TCE (Ref. 56, p. 01A). The regional and local ground water flow direction is likely south-southewesterly towards the St. Joseph River, which is located approximately 1.5 miles south of the site (Ref. 27, p. 011). Therefore, ground water samples were also obtained from the industrial/commercial facilities located northwest, north and northeast of Lane Street in an attempt to locate the source(s) of the ground water contamination (Ref. 7, pp. 014, 15). Work conducted to complete a PA usually does not involve sampling (Ref. 59, p. 0014).

In 2008, IDEM staff conducted a Site Inspection (SI) under CERCLA (Refs. 3, p. 001; 53, p. 0001; 61, pp. 0001 through 0007). The SI sampling was conducted from April 14 through 17 (Ref. 3, p. 020). As stated in the workplan for the SI, the project objective was to verify the presence of TCE in the drinking water of residential and commercial wells and to attempt to identify the source(s) of TCE ground water contamination (Ref. 54, p. 0003). The approved work plan stated that 112 ground water samples and 5 soil samples would be obtained (Ref. 54, p. 0003).

The work plan was drafted using the triad approach (Ref. 57, p. 0002). The triad approach attempts to use systematic planning, dynamic work strategies, and real time measurements to compress mitigation and cleanup actions. The triad approach was developed by EPA to streamline investigations and cleanups (Refs. 57, p. 0002; 58, pp. 0009, 0010, 0013).

IDEM staff employed the use of two (2) direct push devices to obtain ground water and subsurface soil samples. One direct push device was operated by IDEM staff and the other was operated by EPA staff (Ref. 57, p. 0003). A portable gas chromatograph, (GC) operated by an IDEM chemist, was also utilized. IDEM staff used the GC instrument for screening of ground water samples. The instrument provided 'real-time' qualitative screening results. This allowed for the expedited investigation of the extent of the contaminant plume without having to wait for laboratory results and provided a qualitative scale for comparison of contaminated samples. The portable GC was capable of screening for volatile contaminants in the gaseous phase. Through the use of the internal separation column(s) and comparison

with established retention time calibration data, it was possible to both identify the contaminants present and to establish a relative concentration of the contaminant in the gaseous sample (Ref. 57, p. 0003).

In addition to IDEM's portable GC screening activities, Techlaw's Environmental Sampling Assistance Team (ESAT) was tasked to operate their mobile laboratory as part of their Field Analytical Support Program (FASP) Task Order, under the Superfund program. ESAT analyzed water and soil samples in their mobile laboratory using a GC with a mass spectrometer (GC/MS) in order to provide both qualitative identification and quantitative data for VOCs on a rapid turn around time. They provided three chemists for full time analysis in support of this operation (Ref. 57, p. 0003)

The ground water samples were screened in the field from the two mobile laboratories and the results were used by IDEM geologists to assist with the determination of the next sample location. Sample locations were based on the levels and presence of contamination in the screening samples and the direction of ground water flow. Samples were also located to establish the width of the Lane Street contaminant plume that is impacting the private residential wells on Lane Street (Ref. 57, p. 0003).

Utilizing both direct push devices, ground water samples were generally collected from depths of 8 feet, 18 feet, and 30 feet below the ground surface (corresponding to the depth of the water table) (Ref. 5, p. 004; 57, p. 0003).

Since two mobile screening laboratories were used to screen samples for chlorinated VOCs prior to EPA Contract Laboratory Program (CLP) analysis, IDEM staff obtained three separate volumes (nine 40–milliliter [mL] vials) of each sample; one for each of the two mobile screening laboratories and one for EPA's CLP (Ref. 57, p. 0003). All ground water sample collection followed procedures outlined in the conditionaly approved Quality Assurance Project Plan (QAPP) and IDEM's standard operating procedures for borehole ground water sampling and residential well sampling (Refs. 22, pp. 0001 through 0003; 51, p. 0001; 52, p. 0001).

With the use of the direct push devices, three piezometers (temporary monitoring wells) were installed at sample locations E2PY0, E2PX3, and E2PX6. Staff were able to construct a potentiometric surface map and determine more precise ground water flow direction in the immediate area of Lane Street. IDEM determined the ground water flow direction to be south to southwesterly. This allowed staff to search for the source area(s) north to north east of Lane Street (Ref. 3, p. 0769).

Eleven soil samples were collected at the site (Refs. 3, pp. 031, 032, 0763, 0771; 50, p. 0001; 57, p. 0004). The majority of the subsurface soil samples were obtained in an area north of Lane Street, on the western sector of the Hadley property which had been used by the former Dygert facility (Ref. 3, p. 0763). This area was chosen for soil samples because this was the only area where TCE was detected in the ground water of the shallow portion (8 feet deep) of the aquifer (Ref. 3, pp.0765, 0767, 0771). Since TCE was not found in the shallow portion of the aquifer upgradient to this area, a detection of TCE in this shallow portion of the aquifer would indicate a possible source area (Ref. 3, pp. 0765, 0767). Analysis of the subsurface soil samples collected in this area revealed no detections of any VOCs (Ref. 3, p. 042).

A total of 132 ground water samples were collected as part of the SI (Ref. 3, p. 020). Ground water analysis conducted by the two onsite laboratories indicated that elevated levels of VOCs were being detected in a northerly direction and a source area was not identified (Ref. 57, p. 0004).

As part of the SI sampling event in April 2008, IDEM staff conducted reconnaissance inspections at 14 businesses. The businesses were located north (upgradient) of Lane Street. These businesses were located in an area bounded to the south by County Road 106, to the east by Marina Drive, to the north by

Cooper Drive, and to the west by Ada Drive. The purpose of the inspections was to locate potential sources for the ground water plume (Ref. 3, pp. 015, 016, 017, 018, 019; 57, p. 0004; 77; 78)

In August 2008 and December 2008, Site Investigation staff asked John Hulevicz of ECHD to review its inspections files for all facilities north of Lane Street on or near Ada Drive, Cooper Drive, and Marina Drive. On August 14, 2008, Mr. Hulewicz faxed the requested information (Refs. 63; 64; 65; 66; 67; 68; 69; 70; 71; 72; 73; 79).

On September 17, 18, and 19, 2008, IDEM staff conducted a second round of reconnaissance visits at businesses located north of Lane Street. These businesses were located in an area bounded to the south by County Road 106, to the east by Marina Drive, to the north by Cooper Drive, and to the west by Ada Drive. The purpose of the visits was another attempt to locate potential source(s) for the ground water plume (Ref. 3, pp. 0955 through 1028; Ref. 57, p. 0004).

2.2 SOURCE CHARACTERIZATION

2.2.1 SOURCE IDENTIFICATION

Source Number: 1

Source Type: Ground water plume with no identified source

Description and Location of Source (with reference to a map of the site):

The Lane Street Ground Water Contamination site consists of a ground water plume (Ref. 3, p. 0767; the location of the contaminated ground water wells that characterize the plume is found in Refs. 3, p. 0761; 7, p. 15; 19, p. 014). Even though numerous ground water samples (132) were obtained during the April sampling to identify possible sources of chlorinated solvents, (including: TCE, 1,1,1-TCA, trans-1,2-DCE, cis-1,2-DCE, 1,1-DCA, 1,1-DCE, and PCE; the sampling was unable to identify and reasonably attribute with confidence the ground water contamination to any known source (Refs. 3, pp. 020 through 027; 5, p.005). Per the HRS, the plume itself will be considered the source (Ref. 1, Sec 1.1, p. 51587). The extent of this plume has not been completely delineated at this time but has been characterized by data from residential wells, commercial private wells, and ground water samples obtained using direct push instruments (See Sections 2.2.2 and 3.1.1of this HRS documentation record).

The outer boundaries of the contaminated ground water plume have tentatively been established from west to east along County Road 106 from Ada Drive to Marina Drive and north to south from Cooper Drive to Barley Circle (Sections 2.2.2 and 3.1.1 of this HRS documentation record). Note: The northern extent of the ground water plume has not been determined and may extend beyond Cooper Drive. Unimpacted, "background" wells were identified around the plume (See Section 2.2.2 of this HRS documentation record). Fifteen private wells, consisting of residential and commercial privately owned sources, were found to be contaminated with chlorinated VOCs (See Sections 2.2.2 and 3.1.1 of this HRS documentation record). An additional 41 direct push wells were found to be contaminated (see Sections 2.2.2 and 3.1.1 of this HRS documentation record). These wells are within a one-mile radius of the center of the plume (Refs. 25; 3, pp. 0062, 0761; Sections 2.2.2, 3.1.1 of this HRS documentation record). The center of the plume is denoted by the intersection of Lane Street and County Road 106 (Ref. 25; p. 6 of this HRS documentation record).

In August 2008, IDEM's Site Investigation Section began Site Inspection (SI) activities at Lane Street Ground Water Contamination (Ref. 3, p. 014). IDEM conducted sampling using the EPA CLP for sample analysis (Ref. 3, p. 029). Many of the samples obtained for this sampling event were screened using EPA's contract mobile laboratory and IDEM's portable GC instrument which demonstrate sample comparability to CLP analytical results (Ref. 3, pp. 029, 030, 031; 23; 29, p. 029; 35; 36, p. 001; 37). Sample results obtained from the CLP showed that the concentrations of TCE were above the EPA MCL of 5.0 µg/L for TCE in eight samples from seven drinking water wells in a range of 7.6 to 330 µg/L (Sections 2.2.2 and 3.1.1 of this HRS documentation record).

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

The site is being scored as a ground water plume with no identified source (Ref. 1, Sec 1.1, p. 51587). The ground water samples along with their respective VOC detections listed below were collected by IDEM Site Investigation Staff in August 2007 and April 2008 (Refs. 3, pp. 013, 020, 0765, 0767; 7, pp. 014 through 019). Refer to Section 3.1.1 for a list of ground water samples that were found to be contaminated.

HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment Description	Containment Factor Value	Reference(s)
Gas release to air:	Not Scored	
Particulate release to air:	Not Scored	
Release to ground water: Because there is an observed release of a hazardous substance to ground water a containment value of 10 has been assigned (See Sections 2.2.2 and 3.1.1 of this HRS documentation record).	10	1, Table 3-2, p. 51596
Release via overland migration and/or flood:	Not scored	

Notes: The Containment Factor Value for the ground water migration pathway was evaluated for "All Sources" for evidence of hazardous substance migration from source area (i.e. source area includes source and any associated containment structures). A containment factor value of 10 has been determined based on existing analytical evidence of both hazardous substance migration (contamination detected in ground water samples from private wells used for drinking water) and due to the fact that there is nothing to prevent the plume from migrating further (See Sections 2.2.2 and 3.1.1 of this HRS documentation record; Ref. 1, Table 3-2, p. 51596).

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1 Hazardous Constituent Quantity

Description

The information available is not sufficient to evaluate Tier A source hazardous waste quantity, as required in Section 2.4.2.1.1 of the HRS. As a result, hazardous constituent quantity is not scored (NS), and the evaluation of source hazardous waste quantity proceeds to Tier B (Ref. 1, Section 2.4.2.1.1, pp. 51590, 51591).

Hazardous Constituent Quantity Assigned Value: NS

2.4.2.1.2 Hazardous Wastestream Quantity

Description

The information available is not sufficient to evaluate Tier B source hazardous wastestream quantity; as required in Section 2.4.2.1.2 of the HRS. As a result, hazardous wastestream quantity is not scored (NS), and the evaluation of Hazardous Waste Quantity proceeds to the evaluation of Tier C, Volume (Ref. 1, Section 2.4.2.1.2, p. 51591).

Hazardous Wastestream Quantity Assigned Value: NS

2.4.2.1.3 Volume

Description

Because there are wells with samples showing contamination in the ground water but the volume of the contaminated ground water has not been determined, the volume measure of the ground water plume source is considered to be greater than 0 cubic yards but unknown (Ref. 1, Section 2.4.2.1.3, p. 51591).

Volume Assigned Value: Unknown, but >0

2.4.2.1.4 Area

Description

Area, Tier D, is not available for scoring for source type “other” (Ref. 1, Table 2-5, p. 51591).

Area Assigned Value: NA (Not Available)

2.4.2.1.5 Source Hazardous Waste Quantity Value

The source hazardous waste quantity value for Source 1 is unknown, but > 0 (Ref. 1, Section 2.4.2.1.5, p. 51591).

Source Hazardous Waste Quantity Value: Unknown, but >0

SUMMARY OF SOURCE DESCRIPTIONS

Source No.	Source Hazardous Waste Quantity Value	Source Hazardous Constituent Quantity Complete? (Y/N)	Containment Factor Value by Pathway				
			Ground Water (GW) (Ref. 1, Table 3-2)	Surface Water (SW)		Air	
				Overland/flood (Ref. 1, Table 4-2)	GW to SW (Ref. 1, Table 3-2)	Gas (Ref. 1, Table 6-3)	Particulate (Ref. 1, Table 6-9)
1	Unknown, but >0	N	10	NS	NS	NS	NS

NS Not Scored

Possible Sources of Ground Water Plume

Although the source(s) of the chlorinated solvents has not been identified, there are numerous industrial facilities in the area (Ref. 3, pp. 015 through 019, 0771, 0954 through 1027).

Reconnaissance site visits at some facilities were conducted in April and September, 2008 (Ref. 3, pp. 015 through 019, 0771, 0954 through 1027). Elkhart County site inspection reports (that were submitted the Elkhart County Health Department in August and December 2008) for some nearby facilities were also reviewed (Refs. 63; 64; 65; 66; 67; 68; 69; 70; 71; 72; 73; 79). The facilities were located in an area bounded to the north by Cooper Drive, to the west by Ada Drive, to the south by County Road 106, and to the east by Marina Drive (Ref. 3, p. 0771). The purpose of these visits was to determine the possible source(s) of the ground water plume around Lane Street based on activities that were being conducted in the neighborhood. The facilities listed below may have stored or used hazardous substances which are being detected in the ground water; however, there is insufficient information to determine if there are releases from these facilities which are contributing to the ground water plume with no identifiable source (Ref. 3, pp. 015 through 019, 954 through 1027; 69; 70; 71; 72; 74; 79).

Former Dygert Seating Facility
2503 Marina Drive, 2505 Marina Drive, 3507 Cooper Drive (Ref. 3, p. 0771)
Elkhart, Indiana

The former Dygert Seating facility was comprised of three buildings located at 2503 Marina Drive (current location of Hadley Products), 2505 Marina Drive (current location of Shepherd Distributing Company), and 3507 Cooper Drive (current Location of CQC, Inc.) (Ref. 3, pp. 0955, 0982, 1006). For information on CQC, Inc., Hadley Products, and Shepherd Distributing Company, please see the "Attribution" discussion in Section 3.

Accoring to the current management of these three buildings, the buildings were built around 1983 or 1984 and Dygert Seating was the original occupant (Ref. 3, pp. 0955, 0981, 0982, 1006), Flexsteel Industries, Inc. acquired the assets of Dygert Seating in March of 1997 (Ref. 3, pp. 0955, 0981). The building at 3507 Cooper Drive was leased by Hazen Transport, a local transportation and logistic company as a warehouse and a parking lot before CQC (Ref. 3, pp. 0980, 1006). The building at 2505 Marina Drive was leased by Valhalla Foam, a distributor of cut foam, prior to Shephard Distributing Company (Ref. 3, p. 1002). According to CQC, a retention pond is present on the southern boundary of

the property, meaning between the property at 3507 Cooper Drive and that at 2503 Marina Drive (Ref. 3, pp. 0771, 0982, 1006).

Dygert Seating's line of business is manufacturing upholstered vehicle seating and stadium seating (Ref. 3, p. 0956). Dygert Seating may have used solvents, possibly 111-triclor [1,1,1-TCE] to clean the tips of spray glue guns (Ref. 49, p. 0002). Employees interviewed stated that they never saw any on-site disposal of any liquid or other waste (Ref. 49, pp. 0001, 0002, 0955). Dygert Seating is on the EPA Toxic Release Inventory (TRI) and has been issued RCRA ID #IND005253513 (Ref. 3, p. 0955).

In 1993, analysis of the septic tank effluent indicated the presence of toluene (Ref. 71, p. 0009). In 1999, a septic sample indicated the presence of toluene and o-xylene (Ref. 71, p. 0003).

During the April 2008 SI sampling, elevated levels of TCE were detected in the shallow portions of the surface aquifer at a depth between 8-13 feet in an area located on the west side of the property at 2503 Marina Drive (Refer to ground water samples E2Q01, E2Q95, E2Q42, and E2PZ6 found in Section 3.1.1 of this HRS documentation record; Ref. 3, p. 0767). Ground water samples collected from the same portion of the aquifer upgradient to the above mentioned samples were found to contain no detections of VOCs (Refer to ground water samples E2Q60 and E2Q92 found in Section 2.2.2 of this HRS documentation record; Ref. 3, p. 0767).

Because Dygert Seating may have used 1,1,1-TCE, one of the hazardous substances being scored at this site, this property may be a possible source of the ground water contamination (Ref. 49, p. 0002).

Hach Environmental Systems (ETS)
3504 Henke Street (Ref. 3, pp. 0771, 1009)
Elkhart, Indiana

ETS owned the building from 1985 until 2004, when Riverside Tool Corporation purchased it (Ref. 3, pp. 0997, 1009, 1001). ETS leases the front half of the building from Riverside Tool Corporation since 2004 (Ref. 3, pp. 0997, 1011). For information on Riverside Tool Corporation, please see the “Attribution” discussion in Section 3. ETS stopped manufacturing in the year 2000 and may have used organic solvents and alcohol (Ref. 3, pp. 0999, 1009). ETS currently maintains a small research staff at this location (Ref. 3, p. 0999). Toxic or hazardous substance registration information reports indicate that ETS handled non-hazardous waste, hazardous waste, special denatured alcohol, hydrogen peroxide, coolant, and other miscellaneous lab chemicals (Ref. 69, pp. 0002, 0003, 0004, 0005, 0006). Analysis of one facility soil sample revealed the presence of of 1,1-DCA, 1,1-DCE, and 1,1,1-TCA (Ref. 69, pp. 0007, 0008, 0009, 0013, 0014).

Geocel
2504 Marina Drive (Ref. 3, p. 0771)
Elkhart, Indiana

Geocel manufactures and packages sealants, caulks, and adhesives (Refs. 27, p. 004; 28, pp. 002, 006). General processes include product formulation/mixing and packaging into tubes and other containers (Ref. 27, p. 004). A variety of hazardous and non-hazardous chemicals are used and stored at the property, including PCE (Refs. 27, p. 004; 28, p. 006). Investigations of the property indicate that a release of chlorinated solvents has occurred to the ground water pathway (Refs. 28, pp. 004, 006; 40, pp. 04, 879, 886 through 891, 896 through 901).

Former RE Jackson Facility
2601 Marina Drive (formerly 53217 Marina Drive) (Refs. 3, p. 0771; 70, p. 0002)
Elkhart, Indiana

August 1984 inspections revealed floor drains in building with piping leading to a septic tank. Presses were observed leaking on the floor (Ref. 70, p. 0002). A drum marked 1,1,1-TCA was observed in the building (Ref. 70, p. 0002). Hazardous/toxic substance inventory forms revealed that methylene chloride, water base adhesives, citrus solvent/mineral spirits, waste adhesives, compressor water/oil, methylene chloride adhesives, naphtha, isopropyl alcohol, Scotch Grip adhesive, hydraulic oils, various paints, waste oil, xylene, MEK, and other non chlorinated liquids were being handled at this facility (Refs. 70, pp. 0020, 0022, 0024, 0026; 79, pp. 0003, 0005, 0006, 0008, 0011). Septic tank effluent was sampled in 1993 for VOCs. The analysis indicated the presence of toluene, 2,4-trimethyl benzene, butylbenzene, toluene, xylene, 1,3,5-trimethylbenzene, 1,1-DCA, and other VOCs were detected in the analysis (Ref. 70, pp. 0027, 0028, 0029, 0030). Another analysis collected in 1995 of Test Chamber A0341 indicated the presence of 1,4-dichlorobenzene, 1,2-DCA, methylene chloride, and PCE (Refs. 70, p. 0032; 79, p. 0022). And an analysis of Septic Tank #2 A0343 indicated the presence of 1,4-dichlorobenzene, 1,2-DCA, ethyl benzene, methylene chloride, toluene, TCE, and xylenes (Ref. 70, p. 0034; 79, p. 0024). This business is no longer in operation (Ref. 79, p. 0001A). The building is currently used by Pheonix USA (Ref. 3, p. 0771). Well sample LQ4572, collected at this property, did not show detected concentrations of VOCs of concern (see Section 3.1.1 of this HRS documentation record).

Former Stiles Inc. Facility
(formerly 23551 Cooper Drive), Elkhart, Indiana (Ref. 72, p. 0015)

A complaint in August 30, 1984 stated that the facility was discharging glue-type waste into a drainage ditch located on the facility property (Ref. 72, pp. 0012, 0013, 0014). The facility representative indicated that approximately 50 gallons of glue mixed with water waste is generated each week. Reports indicate that State Board of Health would be contacted regarding potential NPDES issues (Ref. 72, p.0013). 1998 Hazardous/toxic substance inventory forms revealed denatured alcohol, Topcoat, stain, lacquer thinner, acetone, solvent waste, TCE, adhesives, hydraulic oil, and paint were being handled at the facility (Ref. 72, pp. 0002, 0003, 0004, 0005, 0006, 0007). A septic waste sample was collected in August 1993. Analysis of the sample revealed the presence of toluene (Ref.72, pp. 0008). Another analysis of the wastewater in August 1992 revealed the presence of toluene and p-dichlorobenzene (Ref. 72, pp. 0009, 0010, 0011). Inspections reports indicate a potential for migration of contamination onto ground surface from spillage of waste thinner in west storage shed (Ref. 72, p.0015). This facility is no longer in business (Ref. 79, p. 0001A).

Engineered Packaging Systems of Indiana
(formerly 23665 Cooper Drive), Elkhart, Indiana (Refs. 62, p. 0001A; 64, pp. 0004, 0007, 0008)

A grab sample of their septic waste was analyzed. Toluene and ethylbenzene along with 1,1,2,2-tetrachloroethane, 1,4 dichlorobenzene, p-Isopropyltoluene, methylene chloride, styrene, and chloroethane were detected in the septic waste. Reports indicate that waste oil is generated at this location (Refs. 62, p. 0001A; 64, pp. 0004, 0007, 0008).

Cameo Industries
(formerly 53212 Ada Drive), Elkhart, Indiana (Ref. 62, p. 0001A)

According to a 1981 inspection report, part of the building was leased from Specialty Products. Parts of

the building are being used as a chemical storage warehouse. The company distributes degreaser solvents. The company did not have all necessary permits at the time of the inspection. A 1983 inspection report noted possible ground water contamination; however, there were no odors detected in the water nor was there any evidence of spills around the area. Notes indicate that PCE, PCA and 1,1,1-TCA may have been stored there. Ground water sample results did not find any contamination. The company stated in 1982 that Specialty Products lease will terminate March 1, 1982. On October 19, 1981, the company was found to have three Class I violations regarding operating a storage facility in Elkhart without an EPA ID number, poor container conditions, and failure to transport containers as indicated on manifests (Refs. 62, p. 0001A; 65, pp. 0005, 0006, 0007, 0008, 0012, 0013, 0014, 0015, 0017, 0020, 0021).

3.0 GROUND WATER MIGRATION PATHWAY

3.0.1 GENERAL CONSIDERATIONS

Ground Water Migration Pathway Description

The Lane Street Ground Water Contamination plume is located within the St. Joseph Aquifer System, which is an aquifer composed of unconsolidated material dominated by glacial outwash sands and gravels (Refs. 5, pp. 0001A, 009 through 021, 143, 175 through 410, 427; 40, pp. 319, 320, 321, 322, 323, 324, 326, 327, 883). The thickness of the aquifer, which is composed of all the unconsolidated material overlying bedrock, in the study area is up to 200 feet (Refs. 5, pp. 002, 155, 400, 401, 402, 403, 428, 429; 40, p. 884). The Ellsworth Shale, a Devonian-Mississippian formation, is the bedrock formation underlying the St. Joseph Aquifer in the study area (Ref. 5, pp. 002, 003, 426, 427, 429, 453). The bedrock is shale and is not utilized as an aquifer since no water wells are known to be screened above and below it (Ref. 5, pp. 003, 027 through 071). All drinking water wells in the area with logs in the state database are completed in the sands and gravels of the St. Joseph Aquifer (Ref. 5, pp. 003, 027 through 071, 143). Ground water flow direction is south-southwesterly toward the St. Joseph River (Refs. 3, p. 0769; 5, p.003; 40, pp. 883, 906).

- **Aquifer/Stratum 1 (uppermost):**

Description

The surficial aquifer is the aquifer being evaluated. According to the Indiana Department of Natural Resources (IDNR) well logs, no known wells have penetrated the bedrock (Ref. 5, pp. 003, 027 through 071, 143). The aquifer consists of sand and gravel (Refs. 5, pp. 0001A, 009 through 021, 143, 175 through 410, 427; 40, pp. 319, 320, 321, 322, 323, 324, 326, 327, 883). Ground water flow is in a south-southwesterly direction toward the St. Joseph River (Refs. 3, pp. 039, 0769; 5, pp. 003, 024, 111, 112; 40, pp. 04, 879, 883, 906).

3.0.2 GEOLOGY AND HYDROGEOLOGY

Regional Background

The St. Joseph Aquifer system has been contaminated locally by hazardous materials from the Lane Street Ground Water Contamination (See Sections 2.2.2 and 3.1.1 of this HRS documentation record). Lane Street Ground Water Contamination is located in the Kankakee Outwash and Lacustrine Plain of the Northern Moraine and Lake Region physiographic unit in northern Indiana (Ref. 5, pp. 0001A, 009 through 021, 175 through 410, 426). Unconsolidated deposits in this area consist of thick units of Wisconsinan-aged glacial outwash deposits that were left by ice advances of the Saginaw and Erie Lobes approximately 15,000 years ago (Ref. 5, pp. 0001A, 427). Because of the thick deposits of transmissive aquifer material and the relatively high precipitation rate of the Great Lakes region, the St. Joseph Aquifer system is capable of producing over 1,000 gallons per minute from properly constructed wells (Refs. 5, pp. 0001A, 144, 145; 40, p. 883). The St. Joseph Aquifer has been designated a sole-source aquifer by the EPA (Refs. 5, pp.0001A, 416 through 422; 40, p. 884).

Site-specific Considerations

Data collected from soil borings advanced at the Lane Street Ground Water Contamination Site as part of this investigation show that geologic materials in the upper 30 ft of the aquifer range from fine, silty sand to well-sorted gravel (Refs. 5, pp. 009 through 021). No clayey material was encountered in IDEM's site investigation (Ref. 5, pp.002, 009 through 021).

A full geologic investigation also took place at the Geocel facility, which is located immediately east of the Lane Street Ground Water Contamination Site (Refs. 5. pp. 002, 155 through 410; 40, p. 05). Geocel entered into IDEM's Voluntary Remediation Program (VRP) in 2007 to remediate an extensive plume of ground water contamination that resulted from the release of PCE into the subsurface (Ref. 40, pp. 04, 05; 45). Approximately 72 soil borings and 119 monitoring wells have been installed on and around the Geocel facility as part of the investigation into the nature and extent of that contamination (Refs. 5, pp. 002, 155 through 410; 40, pp. 10, 337). The majority of these borings were less than 60 ft deep and only encountered sand and gravel units (Refs. 5, pp.002, 175 through 410; 40, pp. 320 through 327, 382 through 618. 884, 888, 892). Data collected from nested monitoring well pairs ranging in depth from 3 to 59 ft show that the ground water contamination at the Geocel facility is located in the same aquifer as the contamination found on Lane Street. However, thin clay deposits (generally less than 5 ft thick) were found at depths of around 140 ft in the three deepest borings advanced during this investigation (Ref. 40, pp. 608 through 618, 888). This clay is not likely to be continuous over a 2-mile radius from Lane Street Ground Water Contamination. Bedrock was encountered in BG-1 at a depth of around 200 ft (Ref. 5, pp. 002, 155, 400, 401, 402, 403; 40, p. 884).

3.0.2.1 Stratigraphy and Water-Bearing Properties

Glacial outwash is usually overlain by a veneer of topsoil in the Elkhart area (Ref. 5, pp. 002, 459). Soils at the site have been classified as "Plainfield fine sand, 0-2% slopes", which is described as "deep, excessively drained and somewhat excessively drained, coarse-textured soil that developed in sandy outwash" (Ref. 5, pp. 002, 412, 413). The soils are up to 60 inches thick and have a very high permeability (>20 inches per hour (Ref. 5, pp. 002, 412, 413). Varying amounts of fill material (up to approximately 10 ft thick) have also been observed in soil boring logs in the area (Ref. 5, p. 002).

Approximately 170 ft of glacially-derived unconsolidated deposits are present between the Devonian and Mississippian-aged shale bedrock units of the Antrim and Ellsworth Formations (at an elevation of approximately 600 ft) and the ground surface (at an elevation of around 770 ft) (Ref. 5, pp. 002, 427 through 429). In the Elkhart area, most of this glacial material is coarse-grained, although some fine-grained till is also observed in the subsurface (Refs. 5, pp. 002, 027 through 071, 175 through 410, 427 through 429; 40, pp. 09, 10, 320, 321, 322, 323, 324, 326, 327). In the vicinity of the site, an unconfined surficial aquifer consisting of sand and gravel units extends to a depth at least 50 ft below the ground surface. The upper aquifer and a lower, confined, sand and gravel aquifer that extends to the bedrock surface; are separated by a confining unit that is generally between 0 and 50 ft thick across the northwestern part of the county. The confining unit is present within 2 miles of site to the northwest and to the south, causing an aquifer discontinuity in those areas (Ref. 5, pp. 002, 089, 090). However, this confining unit is not continuous through a 2-mile radius from the site, so the upper and lower aquifers are interconnected wherever the confining unit is absent (Ref. 5, pp. 002, 089, 090). **Note:** The confining unit is absent at the Lane Street Ground Water Contamination Site, so the surficial aquifer consists of a single sand and gravel unit that extends to bedrock (Refs. 5, pp. 002, 007, 009 through 021, 087, 089, 090, 175 through 410, 429; 40, pp. 319, 320, 321, 322, 323, 324, 326, 327, 383 through 618). The

ground surface at the site slopes gently to the south, and topographic maps for the area show that there is 5 ft or less of relief across the site (Ref. 13). As a result, samples collected from similar depths will have similar elevations and are comparable. Therefore, all wells that are screened within the unconsolidated deposits are considered the same aquifer. Using data from available IDNR well logs, the Indiana Geological Survey (IGS) has prepared a database (iLITH) recording the thickness of different unconsolidated strata throughout Indiana (Ref. 5, pp. 002, 007).

Hydraulic conductivity values for the aquifers are estimated (by calibrated ground water flow models) to be on the order of magnitude of 10^{-1} to 10^{-2} cm/s (Refs. 5, pp. 003, 103 through 105; 40, 892 through 895). The depth to ground water in Elkhart County ranges from 6 to 15 ft below the ground surface (Refs. 5, pp. 003, 025; 40, p. 888). Regional ground water flow is generally to the south, toward the St. Joseph River, which is located approximately 1.4 miles south of the Lane Street Ground Water Contamination Site (Ref. 5, pp. 003). At the time of IDEM's sampling event, ground water was present at depths of 6 to 7 ft (Refs. 3, pp.021 through 027; 4. pp. 001A, 004 through 069, 071 through 106, 114 through 121, 123, 124, 128 through 140, 143; 5, pp. 003, 024, 025). Data from IDEM's investigation determined that the direction of ground water flow was to the south-southwest, with a hydraulic gradient of 0.0015 ft/ft (Refs. 3, p. 039, 0769; 5, pp. 003, 023, 024; 40, p. 879). Slug testing of the shallow part of the aquifer as part of the investigation of the nearby Geocel site yielded a hydraulic conductivity of approximately 100 ft/day (3.5×10^{-2} cm/s) to 375 ft/day (1.3×10^{-1} cm/s) (Refs. 5, pp. 003, 153, 154; 40, p. 893). Assuming that the hydraulic conductivity of the aquifer at Lane Street Ground Water Contamination is similar to the conductivity at the nearby Geocel facility since they are in the same aquifer, the ground water flow velocity in the upper aquifer is on the order of 0.54 ft/day to 2.0 ft/day (Ref. 5, pp. 003, 023).

St. Joseph Aquifer (unconsolidated sand and gravel with some clay till, Pliocene / Pleistocene / Holocene)

The St. Joseph Aquifer system has been contaminated locally by hazardous materials from the Lane Street Ground Water Contamination Site (See Sections 2.2.2 and 3.1.1 of this HRS documentation record). Lane Street Ground Water Contamination is located in the Kankakee Outwash and Lacustrine Plain of the Northern Moraine and Lake Region physiographic unit in northern Indiana (Ref. 5, pp. 0001A, 426). Unconsolidated deposits in this area consist of thick units of Wisconsinan-aged glacial outwash deposits that were left by ice advances of the Saginaw and Erie Lobes approximately 15,000 years ago (Ref. 5, pp. 0001A, 427). Because of the thick deposits of transmissive aquifer material and the relatively high precipitation rate of the Great Lakes region, the St. Joseph Aquifer system is capable of producing over 1,000 gallons per minute from properly constructed wells (Ref. 5, pp. 0001A, 144, 145). The St. Joseph Aquifer has been designated a sole-source aquifer by the EPA (Refs. 5, pp.0001A, 416 through 422; 40, p. 884).

Ellsworth Shale, Lower Confining Bed (dense dark shale, Devonian / Mississippian) - Bedrock

The Ellsworth Shale forms the lower boundary of the St. Joseph Aquifer underneath the study area. Similar bedrock formations underlie the complete Indiana portion of the St. Joseph River basin. The shale is an aquiclude (non permeable) within the study area, and from IDNR well records, no water wells are known to be screened within it or below it in the study area (Ref. 5, pp.003, 027 through 071, 427, 429, 453).

SUMMARY OF AQUIFER(S) BEING EVALUATED

Aquifer No.	Aquifer Name	Is Aquifer Interconnected with Upper Aquifer within 2 miles? (Y/N/NA)	Is Aquifer Continuous within 4-mile TDL? (Y/N)	Is Aquifer Karst? (Y/N)
1	St. Joseph	Y	N	N

This is the only aquifer being evaluated. All wells in the study area are screened in this aquifer. Bedrock beneath the aquifer is shale and is not believed to be an aquifer (Ref. 5, pp.003, 027 through 071; Sections 2.2.2 and 3.1.1 of this HRS documentation record).

3.1 LIKELIHOOD OF RELEASE

3.1.1 OBSERVED RELEASE

Aquifer Being Evaluated: 1 Surficial

Chemical Analysis

Establishing an observed release by chemical analysis requires analytical evidence of a hazardous substance in the media significantly above background level. If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds it own sample quantitation limit (SQL) and that of the background sample. If the SQL cannot be established, the EPA contract-required quantitation limit (CRQL) is used in place of the SQL for sample analyses performed under the EPA CLP, or the detection limit for sample analyses not performed uner the EPA CLP (Ref. 1, Section 2.3, Table 2-3, p. 51589).

The ground water samples collected on August 23, 2007 and August 30, 2007 were sent to Heritage Environmental Services LLC for analysis by EPA Method 524.2 for drinking water (Refs. 7, p. 014; 8, pp. 022 through 038, 042, 043, 044, 051 through 054 through 083, 111 through 133; 21, pp. 009 through 029, 033, 034, 035). Ground water samples that were collected in April 2008 as part of the Site Inspection Work Plan were sent to A4Scientific (a CLP laboratory for CLP Target Compound List [TCL] volatiles using CLP Statement of Work (SOW for Multi-Media, Multi-Concentration Organics Analysis, SOM01.2) (Refs. 3, pp. 029, 83 through 90, 164 through 169, 230 through 236, 288 through 294, 369 through 376, 434 through 442, 547A through 554).

- **Background Concentrations:**

In August 2007, four ground water samples were collected upgradient of the suspected ground water plume as part of the EPA funded PreCERCLIS Screening (LQ4544) and Preliminary Assessment (LQ4572, LQ4573, LQ4574) (Ref. 7, pp. 015, 016, 023; 8, p. 005; 19, pp. 010, 014, 015; 41, p. 08; 42, pp. 03, 04, 05). In April 2008, ten ground water samples were collected up gradient and side-gradient of the suspected ground water plume as part of the EPA funded Site Inspection (E2PR4, E2PR5, E2Q96, E2Q06, E2PT8, E2Q04, E2Q60, E2Q92, E2Q63, E2Q05) (Ref. 3, pp. 014, 759). A total of fourteen ground water samples are considered “background samples” for this HRS documentation record. The well locations can be seen in the sample location maps for each of the sampling events (Ref. 3, pp. 0761; 7, p. 15; 19, p. 014).

The following samples are considered background ground water samples that were obtained from direct push methods. All direct push ground water samples in the area were collected in the sands and gravels of the St. Joseph Aquifer and are in the same aquifer as the permanent well samples (Ref. 5, p. 003, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record). The table provides a summary of the background sample descriptions including the well depth. The date in the table that follows reflects the date(s) the ground water was sampled from the well indicated.

Sample ID	Screened Interval (feet bgs)	Date	References
E2Q06	30 feet	4-14-08	3, pp. 024, 0761; 4, p. 073
E2PT8	30 feet	4-16-08	3, pp. 022, 0761; 4, p. 047
E2Q04	8 feet	4-16-08	3, pp. 025, 0761; 4, p. 071
E2Q60	8 feet	4-16-08	3, pp. 026, 0761; 4, p. 114
E2Q92	8 feet	4-17-08	3, pp. 027, 0761; 4, p. 137
E2Q63	8 feet	4-16-08	3, pp. 026, 0761; 4, p. 117
E2Q05	18 feet	4-14-08	3, pp. 024, 0761; 4, p. 072

The table below lists the background samples that are associated with permanent wells (private business wells and private resident wells) located on Lane Street and in the industrial area north of Lane Street. All drinking water wells in the area are completed in the sands and gravels of the St. Joseph Aquifer and are in the same aquifer (Ref. 5, pp. 003, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record). The table below provides a summary of the background sample descriptions including the well depth (if known) that drinking water wells are drilled and screened at. Specific driller's logs were not available for each residential well; however, a survey of IDNR well records for the nearby area shows that the shallowest well is 23.9 feet bgs and the deepest well is screened to a depth of 58 feet bgs (Ref. 5, pp. 003, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record). The date in the table below reflects the date(s) the ground water was sampled from the well indicated.

Sample ID	Screened Interval (feet bgs)	Date	References
E2PR4	23.9-58 feet	4-14-08	3, pp. 021, 0761; 4, p. 023
E2PR5	23.9-58 feet	4-14-08	3, pp. 021, 0761; 4, p. 024
E2Q96	23.9-58 feet	4-16-08	3, pp. 027, 0761; 4, p. 140
LQ4544	23.9-58 feet	8-23-07	19, pp. 014, 015; 41, p. 08
LQ4574	23.9-58 feet	8-30-07	7, pp. 15, 016, 023; 42, p. 05
LQ4573	23.9-58 feet	8-30-07	7, pp. 15, 016, 023; 42, p. 04
LQ4572	23.9-58 feet	8-30-07	7, pp. 15, 016, 023; 42, p. 03

The following table lists the analytical sample results for background ground water samples that were obtained from direct push methods.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)*	References
E2Q06	4-14-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 230 through 236, 245, 246, 263, 265 through 267, 0767; 4, p. 073; 20, pp. 072, 073, 074
E2PT8	4-16-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 83 through 90, 93, 94, 130, 132 through 135, 0767; 4, p. 047; 20, pp. 420, 421, 422
E2Q04	4-16-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 230 through 236, 245, 246, 263, 265, 266, 267, 767; 4, p. 071; 20, pp. 066, 067, 068
E2Q60	4-16-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 83 through 90, 97, 98, 130, 132 through 135, 0767; 4, p. 114; 20, pp. 458, 459, 460
E2Q92	4-17-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 547A through 554, 561, 562, 590 through 593, 0767; 4, p. 137; 20, pp. 721, 722, 723

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)*	References
E2Q63	4-16-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 83 through 90, 101, 102, 130, 131, 133, 134, 135, 0767; 4, p. 117; 20, pp. 473, 474, 475
E2Q05	4-14-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 230 through 236, 245, 246, 263, 265, 266, 267, 0767; 4, p. 072; 20, pp. 068 through 071

Detection Limit - The detection limits listed are CRQLs for CLP data adjusted for any dilution factors. Adjusted CRQLs are reported for data obtained under CLP.

The following table lists the analytical sample results for background ground water samples that were obtained from permanent wells (private business wells and private resident wells) located on Lane Street and the industrial park north of Lane Street.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PR4	4-14-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 164 through 171, 201, 202, 206, 207, 208, 228, 0767; 4, p. 023; 20, pp. 533, 534, 535
E2PR5	4-14-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 164 through 171, 201, 202, 206, 207, 208, 228, 0767; 4, p. 024; 20, pp. 536, 537, 583

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2Q96	4-16-08	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 0.50 0.50 0.50 0.50 0.50 0.50	3, pp. 164 through 169, 178, 179, 201, 204, 206, 207, 208, 228, 0767; 4, p. 140; 20, pp. 588, 589, 590
LQ4544	8-23-07	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 033 through 035, 178 through 187; 41, p. 08
LQ4574	8-30-07	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 15, 016, 023; 8, pp. 004, 005, 028, 029, 030; 9, pp. 331 through 336; 42, p. 05
LQ4573	8-30-07	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 15, 016, 023; 8, pp. 004, 005, 025, 026, 027; 9, pp.323 through 330; 42, p. 04
LQ4572	8-30-07	1,1-DCA 1,1-DCE 1,1,1-TCA cis-1,2-DCE TCE trans-1,2-DCE PCE	ND ND ND ND ND ND ND	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 15, 016, 023; 8, pp. 004, 005, 022, 023, 024; 9, pp. 317 through 322; 42, p. 03

Detection Limit - Except where otherwise indicated (i.e., [DL]), the detection limits listed are CRQLs for CLP data adjusted for any dilution factors. Detection limits noted as "DL" are detection limits reported on analytical laboratory's certificate of analysis. Adjusted CRQLs are reported for data obtained under CLP, whereas laboratory detection limits are reported for EPA non-CLP data.

- **Contaminated Samples:**

The following samples meet the observed release criteria and are presented below indicating organic hazardous substances with their concentrations and detection limits. These samples were qualified as "releases" based on the criteria in the HRS Rule (Ref. 1, Table 2-3, p. 51589). The well locations can be seen in the sample location maps for each of the sampling events (Ref. 3, pp. 0761; 7, p. 15; 19, p. 014).

The following table lists ground water samples that were obtained from a direct push method that met observed release criteria. The table provides a summary of the background sample descriptions including the well depth. The date in the table below reflects the date(s) the ground water was sampled from the well indicated. All direct push ground water samples in the area were collected in the sands and gravels of the St. Joseph Aquifer and are in the same aquifer as the permanent well samples (Ref. 5, p. 3, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record).

Sample ID	Screened Interval (feet bgs)	Date	References
E2PP2	23 feet	4/16/08	3, pp. 021, 0761; 4, p. 001A
E2PP8	35 feet	4/16/08	3, pp. 021, 0761; 4, p. 007
E2PQ1	18 feet	4/16/08	3, pp. 021, 0761; 4, p. 010
E2PT6	8 feet	4/16/08	3, pp. 022, 0761; 4, p. 045
E2PT7	18 feet	4/16/08	3, pp. 022, 0761; 4, p. 046
E2Q01	13 feet	4/16/08	3, pp. 021, 0761; 4, p. 069
E2Q40	30 feet	4/16/08	3, pp. 025, 0761; 4, p. 103
E2Q41	18 feet	4/16/08	3, pp. 026, 0761; 4, p. 104
E2Q42	8 feet	4/16/08	3, pp. 026, 0761; 4, p. 105
E2Q46	8 feet	4/16/08	3, pp. 026, 0761; 4, p. 106
E2Q61	30 feet	4/16/08	3, pp. 026, 0761; 4, p. 115
E2Q62	18 feet	4/16/08	3, pp. 026, 0761; 4, p. 116
E2Q64	18 feet	4/16/08	3, pp. 026, 0761; 4, p. 118
E2Q65	18 feet	4/16/08	3, pp. 026, 0761; 4, p. 119
E2PY5	18 feet	4/15/08	3, pp. 023, 0761; 4, p. 059
E2PY6	30 feet	4/15/08	3, pp. 023, 761; 4, p. 060
E2PZ6	8 feet	4/15/08	3, pp. 023, 0761; 4, p. 064
E2PZ7	30 feet	4/15/08	3, pp. 023, 0761; 4, p. 065
E2PZ8	18 feet	4/15/08	3, pp. 024, 0761; 4, p. 066
E2PZ9	8 feet	4/15/08	3, pp. 024, 0761; 4, p. 067
E2PX6	30 feet	4/15/08	3, pp. 022, 0761; 4, p. 051
E2PX7	18 feet	4/15/08	3, pp. 023, 0761; 4, p. 052
E2PX8	8 feet	4/15/08	3, pp. 023, 0761; 4, p. 053
E2Q08	18 feet	4/15/08	3, pp. 024, 0761; 4, p. 075
E2Q09	30 feet	4/15/08	3, pp. 024, 0761; 4, p. 076
E2PX3	30 feet	4/14/08	3, pp. 022, 0761; 4, p. 048
E2Q66	30 feet	4/16/08	3, pp. 026, 0761; 4, p. 120
E2Q95	13 feet	4/16/08	3, pp. 027, 0761; 4, p. 139
E2PZ3	30 feet	4/15/08	3, pp. 023, 0761; 4, p. 061

Sample ID	Screened Interval (feet bgs)	Date	References
E2PZ4	18 feet	4/15/08	3, pp. 023, 0761; 4, p. 062
E2PZ5	18 feet	4/15/08	3, pp. 023, 0761; 4, p. 063
E2Q24	18 feet	4/15/08	3, pp. 025, 0761; 4, p. 091
E2Q25	30 feet	4/15/08	3, pp. 025, 0761; 4, p. 092
E2Q26	18 feet	4/15/08	3, pp. 025, 0761; 4, p. 093
E2Q72	30 feet	4/17/08	3, pp. 026, 0761; 4, p. 121
E2Q86	8 feet	4/17/08	3, pp. 027, 0761; 4, p. 131
E2Q87	8 feet	4/17/08	3, pp. 027, 0761; 4, p. 132
E2Q88	18 feet	4/17/08	3, pp. 027, 0761; 4, p. 133
E2Q89	18 feet	4/17/08	3, pp. 027, 0761; 4, p. 134
E2Q90	30 feet	4/17/08	3, pp. 027, 0761; 4, p. 135
E2Q93	18 feet	4/17/08	3, pp. 027, 0761; 4, p. 138

The following table lists ground water samples that were obtained from private wells that met observed release criteria. The table provides a summary of the contaminated sample descriptions including the well depth (if known) that drinking water wells are drilled and screened. Specific driller's logs were not available for each residential well; however, a survey of IDNR well records for the nearby area shows that the shallowest well is 23.9 feet bgs and the deepest well is screened to a depth of 58 feet bgs (Ref. 5, pp. 003, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record). All drinking water wells in the area are completed in the sands and gravels of the St. Joseph Aquifer and are in the same aquifer (Ref. 5, pp. 003, 027 through 071; Sections 3.0.1 and 3.0.2 of this HRS documentation record). The date in the table below reflects the date(s) the ground water was sampled from the well indicated.

Sample ID	Screened Interval (feet bgs)	Date	References
E2PR8	30-35 feet	4/14/08	3, pp. 021, 0761; 4, p. 027
E2PR3	23.9-58 feet	4/14/08	3, pp. 021, 0761; 4, p. 022
E2PR6	23.9-58 feet	4/14/08	3, pp. 021, 0761; 4, p. 025
E2PQ8	28 feet	4/15/08	3, pp. 024, 0761; 4, p. 017; 43, pp. 001 through 004; 81, p. 013
E2PT4	30 feet	4/15/08	3, pp. 022, 0761; 4, p. 043; 43, pp. 001 through 004; 81, p. 007
E2PT5	30 feet	4/15/08	3, pp. 022, 0761; 4, p. 044; 43, pp. 001 through 004; 81, p. 007
E2PT0	50 feet	4/14/08	3, pp. 022, 0761; 4, p. 039; 43, pp. 001 through 004; 42, p. 002; 81, p. 019
E2PT1	50 feet	4/14/08	3, pp. 022, 0761; 4, p. 040; 43, pp. 001 through 004; 81, p. 015
E2PS5	30 feet	4/14/08	3, pp. 022, 0761; 4, p. 034; 42, p. 002; 43, pp. 001 through 004; 81, p. 001A

Sample ID	Screened Interval (feet bgs)	Date	References
E2PS6	23.9-58 feet	4/14/08	3, pp. 022, 0761; 4, p. 035; 43, pp. 001 through 004
E2PS7	23.9-58 feet	4/14/08	3, pp. 022, 0761; 4, p. 036; 43, pp. 001 through 004
E2Q14	35 feet	4/14/08	3, pp. 024, 0761; 4, p. 081; 43, pp. 001 through 004; 81, p. 021
E2PQ2	25 feet	4/15/08	3, pp. 021, 0761; 4, p. 011; 43, pp. 001 through 004; 81, p. 009
E2PR0	23.9-58 feet	4/15/08	3, pp. 021, 0761; 4, p. 01943, pp. 001 through 004
E2PR2	24 feet	4/15/08	3, pp. 021, 0761; 4, p. 021; 43, pp. 001 through 004; 81, p. 005
LQ4537	30 feet	8/23/2008	19, pp.014, 015; 41, p. 01A; 43, pp. 001 through 004; 81, p. 001A
LQ4538	30 feet	8/23/2008	19, pp. 014, 015; 41, p. 02; 43, pp. 001 through 004; 81, p. 001A
LQ4539	23.9-58 feet	8/23/2008	19, pp. 014, 015; 41, p. 03; 43, pp. 001 through 004
LQ4540	24 feet	8/23/2008	19, pp. 014, 015; 41, p. 04; 43, pp. 001 through 004; 81, p. 005
LQ4541	30 feet	8/23/2008	19, pp. 014, 015; 41, p. 05; 43, pp. 001 through 004; 81, p. 007
LQ4542	35 feet	8/23/2008	19, pp. 014, 015; 41, p. 06; 43, pp. 001 through 004; 81, p. 021
LQ4575	23.9-58 feet	8/31/08	7, pp. 15, 016, 022, 023; 42, p. 06
LQ4577	23.9-58 feet	8/31/08	7, pp. 15, 016, 022, 023; 42, p. 08
LQ4581	30 feet	8/31/08	7, pp. 15, 016, 022, 023; 42, p. 11; 43, pp. 001 through 004; 81, p. 11
LQ4582	24 feet	8/31/08	7, pp. 15, 016, 022, 023; 42, p. 12; 43, pp. 001 through 004; 81, p. 005
LQ4583	24 feet	8/31/08	7, pp. 5, 016, 022, 023; 42, p. 13; 43, pp. 001 through 004; 81, p. 005
LQ4584	25 feet	8/31/08	7, pp. 15, 017, 022, 023; 42, p. 14; 43, pp. 001 through 004; 81, p. 009
LQ4585	28 feet	8/31/08	7, pp. 15, 017, 022, 023; 42, p. 15; 43, pp. 001 through 004; 81, p. 013
LQ4586	20 feet	8/31/08	7, pp. 15, 017, 022, 023; 42, p. 16; 81, p. 017

Sample ID	Screened Interval (feet bgs)	Date	References
LQ4598	23.9-58 feet	8/31/08	7, pp. 15, 017, 022, 023; 42, p. 26; 43, pp. 001 through 004
LQ4599	30 feet	8/31/08	7, pp. 15, 018, 022, 023; 42, p. 27; 43, pp. 001 through 004; 81, p. 007
LQ4600	40 feet	8/31/08	7, pp. 15, 018, 022, 023; 42, p. 28; 43, pp. 001 through 004; 81, p. 011
LQ4601	50 feet	8/31/08	7, pp. 15, 018, 022, 023; 42, p. 29; 43, pp. 001 through 004; 81, p. 015
LQ4602	50 feet)	8/31/08	7, pp. 15, 018, 022, 023; 42, p. 30; 43, pp. 001 through 004; 81, p. 019
LQ4603	35 feet	8/31/08	7, pp. 15, 018, 022, 023; 42, p. 31; 43, pp. 001 through 004; 81, p. 021

The following table lists analytical sample results for observed release samples that were obtained from a direct push method.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PP2	4/16/08	1,1-DCA 1,1,1-TCA TCE	0.92 14.0 420	0.50 0.50 13∗	3, pp. 83 through 92, 130, 131, 133, 0767; 4, p. 001A; 20, pp. 401 through 406
E2PP8	4/16/08	1,1-DCA 1,1,1-TCA TCE	3.7 0.63 190	0.50 0.50 1.0∗	3, pp. 83 through 92, 130, 131, 133, 0767; 4, p. 007; 20, pp. 407 through 410, 442 through 444
E2PQ1	4/16/08	1,1,1-TCA TCE	1.6 µg/ 1.6	0.50 0.50	3, pp. 83 through 90, 93, 94, 130, 131, 133, 0767; 4, pp. 010; 20, pp. 411, 412, 413
E2PT6	4/16/08	TCE	0.81	0.50	3, pp. 83 through 90, 93, 94, 130, 132, 133, 0767; 4, p. 045; 20, pp. 414, 415, 416
E2PT7	4/16/08	1,1,1-TCA TCE	1.7 4.7	0.50 0.50	3, pp. 83 through 90, 93, 94, 130, 132, 0767; 4, p. 046; 20, pp. 417, 418, 419
E2Q01	4/16/08	1,1,1-TCA TCE	2.4 84.0	0.50 5.0∗	3, pp. 83 through 90, 93, 94, 130, 132, 133, 0767; 4, p. 069; 20, pp. 423 through 428
E2Q40	4/16/08	trans-1,2-DCE TCE	0.56 70	0.50 5.0∗	3, pp. 83 through 90, 95, 96, 130, 133, 0767; 4, p. 103; 20, pp. 429 through 434

∗ E2PP2 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.
* E2PP8 was diluted 2-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q01 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q40 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2Q41	4/16/08	1,1,1-TCA TCE	4.5 410	0.50 13 ∗	3, pp. 83 through 90, 95, 96, 130, 131, 133, 0767; 4, p. 104; 20, pp. 435 through 440
E2Q42	4/16/08	1,1,1-TCA TCE	1.8 55	0.50 5.0∗	3, pp. 83 through 90, 97, 98, 131, 133, 0767; 4, p. 105; 20, pp. 441, 445, 446, 449, 450, 451
E2Q46	4/16/08	1,1,1-TCA TCE	1.8 47	0.50 5.0∗	3, pp. 83 through 90, 97, 98, 130, 131, 131, 133, 0767; 4, p. 106; 20, pp. 452 through 457
E2Q61	4/16/08	1,1-DCA TCE	0.73 18J (10)*	0.50 0.50	3, pp. 83 through 90, 99, 100, 130, 132, 133, 140, 0767; 4, p. 115; 20, pp. 461 through 469A
E2Q62	4/16/08	1,1,1-TCA TCE PCE	2.3 24 1.5	0.50 2.0∗ 0.50	3, pp. 83 through 90, 99, 100, 130, 132, 133, 0767; 4, p 116; 20, pp. 469B through 472
E2Q64	4/16/08	1,1,1-TCA TCE	1.2 55	0.50 2.5∗	3, pp. 83 through 90, 101, 102, 130, 131, 133, 0767; 4, p. 118; 20, pp. 476 through 481

∗ E2Q41 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q42 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q46 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q61 TCE concentration is an estimated quantity, but the presence of the analyte is not in doubt. The relative percent difference (RPD) between the matrix spike and matrix spike duplicate recoveries is outside criteria. The reported value may be biased unknown. The value presented parenthetically is the concentration adjusted for the bias according to the EPA factsheet in Reference 45.

∗ E2Q62 was diluted 4-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q64 was diluted 5-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2Q65	4/16/08	1,1,1-TCA TCE	1.7 35	0.50 5.0∗	3, pp. 83 through 90, 101, 102, 130, 131, 133, 07674, p. 119; 20, pp. 482 through 487
E2PY5	4/15/08	1,1,1-TCA TCE	1.2 10	0.50 1.0 ∗	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 059; 20, pp. 337 through 342
E2PY6	4/15/08	1,1,1-TCA TCE	0.58 11	0.50 0.50	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 060; 20, pp. 343, 344, 345
E2PZ6	4/15/08	1,1,1-TCA TCE	0.87 ug/L 29J (17)*	0.50 2.5*	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 064; 20, pp. 346 through 357
E2PZ7	4/15/08	1,1-DCA 1,1,1-TCA	1.1 2.1	0.50 0.50	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 065; 20, pp. 358, 359, 360
E2PZ8	4/15/08	1,1,1-TCA	7.3	0.50	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 066; 20, pp. 361, 362, 363

∗ E2Q65 was diluted 10-fold for TCE. CRQL have been adjusted based on the dilution factor.

∗ E2PY5 was diluted 2-fold for TCE. CRQL has been adjusted based on the dilution factor.

* E2PZ6 TCE concentration is an estimated quantity, but the presence of the analyte is not in doubt. The RPD between the matrix spike and matrix spike duplicate recoveries is outside criteria. The reported value may be biased unknown. The value presented parenthetically is the concentration adjusted for the bias according to the EPA factsheet in Reference 45.

* E2PZ6 was diluted 5-fold for TCE. CRQL has been adjustd based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PZ9	4/15/08	1,1,1-TCA	3.2	0.50	3, pp. 434 through 442, 477, 478, 480, 481, 0767; 4, p. 067; 20, pp. 364, 365, 366
E2PX6	4/15/08	TCE	90.0	2.5∗	3, pp. 369 through 378, 407, 408, 411, 412, 0767; 4, p. 051; 20, pp. 207 through 212
E2PX7	4/15/08	1,1,1-TCA TCE	5.8 360	0.50 13∗	3, pp. 369 through 380, 407, 408, 411, 412, 0767; 4, p. 052; 20, pp. 213 through 218
E2PX8	4/15/08	1,1,1-TCA	0.52	0.50	3, pp. 369 through 376, 379, 380, 407, 408, 411, 412, 0767; 4, p. 053; 20, pp. 219 through 224
E2Q08	4/15/08	1,1,1-TCA TCE	1.0 15	0.50 0.50	3, pp. 369 through 376, 381, 382, 407, 408, 411, 412, 0767; 4, p. 075; 20, pp. 231, 232, 233
E2Q09	4/15/08	1,1-DCA 1,1,1-TCA TCE	3.6 61 78	0.50 2.5∗ 2.5∗	3, pp. 369 through 376, 381, 382, 407, 408, 411, 412, 0767; 4, p. 076; 20, pp. 234 through 239

∗ E2PX6 was diluted 5-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PX7 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q09 was diluted 5-fold for 1,1,1-TCA. CRQL has been adjusted based on the dilution factor.
∗ E2Q09 was diluted 5-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PX3	4/14/08	1,1-DCA TCE	3.0 2.7	0.50 0.50	3, pp. 230 through 236, 243, 244, 263, 265, 266, 267, 0767; 4, p. 048; 20, pp. 057, 058, 059
E2Q66	4/16/08	1,1-DCA TCE	1.3 45	0.50 2.5∗	3, pp. 164 through 169, 176, 177, 201, 205, 207, 0767; 4, p. 120; 20, pp. 576 through 581
E2Q95	4/16/08	1,1,1-TCA TCE	3.0 110	0.50 5.0∗	3, pp. 164 through 169, 176, 177, 201, 204, 206, 207, 0767; 4, p. 139; 20, pp. 582 through 587
E2PZ3	4/15/08	1,1-DCA 1,1,1-TCA TCE	0.62 8.8 440	0.50 0.50 25∗	3, pp. 288 through 294, 299, 300, 338, 339, 343, 344, 0767; 4, p. 061; 20, pp. 121 through 126
E2PZ4	4/15/08	1,1,1-TCA TCE	7.3 410	0.50 13∗	3, pp. 288 through 294, 299, 300, 338, 339, 343, 344, 0767; 4, p. 062; 20, pp. 127 through 132
E2PZ5	4/15/08	TCE	320	13∗	3, pp. 288 through 294, 301, 302, 338, 339, 343, 344, 0767; 4, p. 063; 20, pp. 133 through 138
E2Q24	4/15/08	1,1-DCA 1,1,1-TCA TCE	0.60 16 150	0.50 10∗ 10∗	3, pp. 288 through 294, 303, 304, 338, 340, 343, 344, 0767; 4, p. 091; 20, pp. 148 through 153

∗ E2Q66 was diluted 5-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q95 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2PZ3 was diluted 50-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2PZ4 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2PZ5 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2Q24 was diluted 20-fold for 1,1,1-TCA. CRQL has been adjusted based on the dilution factor.

∗ E2Q24 was diluted 20-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2Q25	4/15/08	1,1-DCA 1,1,1-TCA TCE	5.6 12 140	0.50 0.50 10 ∗	3, pp. 288 through 294, 303, 304, 338, 340, 343, 344, 0767; 4, p. 092; 20, pp. 154 through 159
E2Q26	4/15/08	1,1-DCA cis-1,2-DCE TCE	5.3 0.82 190	0.50 0.50 10∗	3, pp. 288 through 294, 303, 304, 338, 340, 343, 344, 0767; 4, p. 093; 20, pp. 160 through 163
E2Q72	4/17/08	TCE	11	0.50	3, pp. 547A through 554, 556, 557, 587, 590, 591, 592, 0767; 4, p. 121; 20, pp. 664, 665, 666
E2Q86	4/17/08	TCE	4.5	0.50	3, pp. 547A through 554, 559, 560, 587, 589, 591, 592, 0767; 4, p. 131; 20, pp. 697, 698, 699
E2Q87	4/17/08	TCE	4.6	0.50	3, pp. 547A through 554, 559, 560, 587, 589, 591, 592, 0767; 4, p. 132; 20, pp. 700, 701, 702
E2Q88	4/17/08	TCE	49	25∗	3, pp. 547A through 554, 559, 560, 587, 589, 591, 592, 767; 4, p. 133; 20, pp. 703 through 708
E2Q89	4/17/08	1,1,1-TCA TCE	10 770	0.50 25∗	3, pp. 547A through 554, 561, 562, 587, 589, 591, 592, 0767; 4, p. 134; 20, pp. 709 through 714

∗ E2Q25 was diluted 20-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q26 was diluted 20-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q88 was diluted 50-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2Q89 was diluted 50-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2Q90	4/17/08	1,1-DCA cis-1,2-DCE 1,1,1-TCA TCE	0.88 0.51 8.0 690	0.50 0.50 0.50 25 ∗	3, pp. 547A through 554, 561, 562, 591, 592, 0767; 4, p. 135; 20, pp. 715 through 720
E2Q93	4/17/08	1,1,1-TCA PCE	1.2 19	0.50 0.50	3, pp. 547A through 554, 563, 564, 587, 590, 591, 592, 0767; 4, p. 138; 20, pp. 724, 725, 726

Detection Limit - The detection limits listed are CRQLs for CLP data adjusted for any dilution factors. Adjusted CRQLs are reported for data obtained under CLP.

The following table lists analytical sample results for observed release samples that were obtained from private wells (private business and private residential wells located on Lane Street and the industrial park north of Lane Street).

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PR8	4/14/08	trans-1,2-DCE cis-1,2-DCE	0.75 21	0.50 1.0∗	3, pp. 230 through 236, 239, 240, 241, 242, 263, 264, 266, 267, 0767; 4, p. 027; 20, pp. 027 through 032
E2PR3	4/14/08	cis-1,2-DCE	0.85	0.50	3, pp. 164 through 171, 201, 206, 207, 0767; 4, p. 022; 20, pp. 530, 531, 532

∗ E2Q90 was diluted 50-fold for TCE. CRQL has been adjusted based on the dilution factor.

∗ E2PR8 was diluted 2-fold for cis-1,2-DCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PR6	4/14/08	1,1-DCA	2.3	0.50	3, pp. 164 through 171, 201, 202, 206, 207, 0767; 4, p. 025; 20, pp. 539, 540, 541
E2PQ8	4/15/08	1,1-DCA cis-1,2-DCE TCE	5.2 0.76 200	0.50 0.50 10∗	3, pp. 338, 341, 434 through 444, 477, 478, 480, 481, 0767; 4, p. 017; 20, pp. 310 through 315
E2PT4	4/15/08	1,1-DCA TCE	7.6 50	0.50 2.5∗	3, pp. 434 through 442, 445, 446, 477, 480, 481, 0767; 4, p. 043; 20, pp. 319 through 324
E2PT5	4/15/08	1,1-DCA	7.7	0.50	3, pp. 434 through 442, 445, 446, 477, 480, 481, 0767; 4, p. 044; 20, pp. 325, 326, 327
E2PT0	4/14/08	1,1-DCA TCE	2.0 2.5	0.50 0.50	3, pp. 230 through 236, 243, 244, 263, 264, 266, 267, 0767; 4, p. 039; 20, pp. 045, 046, 047
E2PT1	4/14/08	1,1-DCA TCE	6.5 9.9	0.50 1.0∗	3, pp. 230 through 236, 243, 244, 263, 265, 266, 267, 0767; 4, p. 040; 20, pp. 048 through 053
E2PS5	4/14/08	1,1-DCA 1,1,1-TCA TCE	10 3.0 80	0.50 0.50 5.0∗	3, pp. 164 through 169, 172, 173, 201, 202, 206, 207, 0767; 4, p. 034; 20, pp. 548 through 553

∗ E2PQ8 was diluted 20-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PT4 was diluted 5-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PT1 was diluted 2-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PS5 was diluted 10-fold for TCE. CRQL has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
E2PS6	4/14/08	1,1-DCA 1,1,1-TCA	4.1 15	0.50 0.50	3, pp. 164 through 169, 172, 173, 201, 202, 206, 207, 0767; 4, p. 035; 20, pp. 554, 555, 556
E2PS7	4/14/08	1,1-DCA 1,1,1-TCA TCE	3.8 14 7.6	0.50 0.50 0.50	3, pp. 164 through 169, 174, 175, 201, 202, 206, 207, 0767; 4, p. 036; 20, pp. 557, 558, 559
E2Q14	4/14/08	1,1-DCA TCE	3.8 1.3	0.50 0.50	3, pp. 164 through 169, 176, 177, 201, 203, 206, 207, 0767; 4, p. 081; 20, pp. 573, 574, 575
E2PQ2	4/15/08	1,1-DCA cis-1,2-DCE TCE	3.3 0.67 220	0.50 0.50 13∗	3, pp. 288 through 296, 338, 339, 343, 344, 0767; 4, p. 011; 20, pp. 090 through 095
E2PR0	4/15/08	1,1-DCA cis-1,2-DCE TCE	2.7 0.70 330	0.50 0.50 13∗	3, pp. 288 through 296, 338, 339, 343, 344, 0767; 4, p. 019; 20, pp. 099 through 104
E2PR2	4/15/08	1,1-DCA cis-1,2-DCE 1,1,1-TCA TCE	3.7 0.77 16 300	0.50 0.50 13∗ 13∗	3, pp. 288 through 294, 297, 298, 338, 339, 343, 344, 0767; 4, p. 021; 20, pp. 112 through 117
LQ4537	8/23/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	0.51 3.4 96 13	0.50 [DL] 0.50 [DL] 5.00∗ [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 009 through 012, 111 through 121; 41, p. 01A

∗ E2PQ2 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PR0 was diluted 25-fold for TCE. CRQL has been adjusted based on the dilution factor.
∗ E2PR2 was diluted 25-fold for 1,1,1-TCA. CRQL has been adjusted based on the dilution factor.
∗ E2PR2 was diluted 25-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4537 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
LQ4538	8/23/07	1,1,1-TCA TCE 1,1-DCA	3 120 9.9	0.50 [DL] 5.0 ∗ [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 013 through 016; 41, p. 02
LQ4539	8/23/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	0.62 21 7.9 4.2	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 017, 018, 019, 122 through 134; 41, p. 03
LQ4540	8/23/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	1.0 23 300 3.7	0.50 [DL] 0.50 [DL] 5.0∗ [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 020 through 023, 135 through 144; 41, p. 04
LQ4541	8/23/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	0.62 1.7 55 10	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 024, 025, 026, 145 through 157; 41, p. 05
LQ4542	8/23/07	TCE 1,1-DCA	1.2 4.1	0.50 [DL] 0.50 [DL]	19, pp. 014, 015; 21, pp. 005, 027, 028, 029, 158 through 169; 41, p. 06
LQ4575	8/31/07	1,1-DCA	1.5	0.50 [DL]	7, pp. 016, 022, 023; 8, pp. 005, 031 through 038, 158; 9, pp. 337 through 345; 42, p. 06
LQ4577	8/31/07	TCE	9.2	0.50 [DL]	7, pp. 016, 022, 023; 8, pp. 005, 042, 043, 044, 158; 9, pp 351 through 359; 42, p. 08
LQ4581	8/31/07	1,1,1-TCA TCE 1,1-DCA	3.8 100 11	0.50 [DL] 2.5 ∗ [DL] 0.50 [DL]	7, pp. 016, 022, 023; 8, pp. 006, 051 through 054, 158; 9, pp. 374 through 382; 42, p. 11

∗ LQ4538 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4540 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4581 was diluted 5-fold for TCE. Detection limit has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
LQ4582	8/31/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA cis-1,2-DCE	1.3 28 300 4.8 0.58	0.50 [DL] 0.50 [DL] 5.0 ∗ [DL] 0.50 [DL] 0.50 [DL]	7, pp. 016, 022, 023; 8, pp. 006, 055 through 063; 9, pp. 383 through 391; 42, p. 12
LQ4583	8/31/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA cis-1,2-DCE	0.99 21 320 3.7 0.53	0.50 [DL] 0.50 [DL] 5.0∗ [DL] 0.50 [DL] 0.50 [DL]	7, pp. 016, 022, 023; 8, pp. 006, 064 through 072, 158; 9, pp. 392 through 400; 42, p. 13
LQ4584	8/31/07	TCE 1,1-DCA cis-1,2-DCE	300 3.3 0.77	5.0∗ [DL] 0.50 [DL] 0.50 [DL]	7, pp. 017, 022, 023; 8, pp. 006, 073 through 076, 158; 9, pp. 401 through 408; 42, p. 14
LQ4585	8/31/07	TCE 1,1-DCA cis-1,2-DCE	160 5.9 0.57	5.0 ∗ [DL] 0.50 [DL] 0.50 [DL]	7, pp. 017, 022, 023; 8, pp. 006, 077 through 080, 158; 9, pp. 409 through 417; 42, p. 15
LQ4586	8/31/07	TCE 1,1-DCA cis-1,2-DCE	27 3.9 0.54	0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 017, 022, 023; 8, pp. 006, 081, 082, 083, 158; 9, pp 418 through 427; 42, p. 16
LQ4598	8/31/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	0.53 20 7.0 3.9	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 017, 022, 023; 8, pp. 008, 111 through 118, 159; 10, pp. 110 through 119; 42, p. 26
LQ4599	8/31/07	1,1-DCE 1,1,1-TCA TCE 1,1-DCA	0.56 1.8 49 10	0.50 [DL] 0.50 [DL] 0.50 [DL] 0.50 [DL]	7, pp. 018, 022, 023; 8, pp. 008, 119, 120, 121, 159; 10 pp. 120 through 130; 42, p. 27
LQ4600	8/31/07	TCE 1,1-DCA	49 8.9	0.50 [DL] 0.50 [DL]	7, pp. 018, 022, 023; 8, pp. 008, 122, 123, 124, 159; 10, pp. 131 through 140; 42, p. 28

∗ LQ4582 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4583 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4584 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.
∗ LQ4585 was diluted 10-fold for TCE. Detection limit has been adjusted based on the dilution factor.

Sample ID	Date	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Detection Limit (µg/L)	References
LQ4601	8/31/07	TCE 1,1-DCA	21 6.3	0.50 [DL] 0.50 [DL]	7, pp. 018, 022, 023; 8, pp. 008, 125, 126, 127, 159; 10, pp 141 through 150; 42, p. 29
LQ4602	8/31/07	TCE 1,1-DCA	1.1 1.8	0.50 [DL] 0.50 [DL]	7, pp. 018, 022, 023; 8, pp. 008, 128, 129, 130, 159; 10, pp. 151 through 159; 42, p. 30
LQ4603	8/31/07	TCE 1,1-DCA	1.1 3.9	0.50 [DL] 0.50 [DL]	7, pp. 018, 022, 023; 8, pp. 008, 131, 132, 133, 159; 10, pp. 160 through 170; 42, p. 31

Detection Limit - Except where otherwise indicated (i.e., [DL]), the detection limits listed are CRQLs for CLP data adjusted for any dilution factors. Detection limits noted as "DL" are detection limits reported on analytical laboratory's certificate of analysis. Adjusted CRQLs are reported for data obtained under CLP, whereas laboratory detection limits are reported for EPA non-CLP data.

List of Hazardous Substances Associated with Source

The following hazardous substances are associated with the source:
TCE
1,1-DCE
1,1-DCA
cis 1,2-DCE
1,1,1-TCA
trans-1,2-DCE
PCE

Attribution

Due to the number and close proximity of Lane Street Ground Water Contamination to an industrial park that is comprised of numerous light industrial/commercial buildings and offices (Refs. 3, pp. 009, 010, 0752, 0771; 13; 27, p. 023), it is improbable to identify and reasonably attribute with confidence the ground water contamination to any known source. Because the source is a contaminated ground water plume with no identified source of contamination, attribution has not been determined (Ref. 1, Section 3.1.1, p. 51595).

The following information was gathered from a review of the Elkhart County inspection files of various facilities operating north of Lane Street, from interviews conducted during reconnaissance visits, and/or from reviews of EPA/IDEM documents. There is currently no available information that the following facilities may be the source(s) of the ground water contamination.

CQC, Inc.
3507 Cooper Drive, Elkhart, Indiana (Ref. 3, p. 0771)

CQC is a manufacturer of custom interiors for towable vehicles and has been at this location for 18 months (Ref. 3, p. 1006). CQC leases the property. The facility uses standard cleaning products such as Windex, peroxide, and Chlorox (Ref. 3, pp. 0980, 1006). There are no Material Safety Data Sheets (MSDS) on file (Ref. 3, p. 0980).CQC has never used nor does it presently use chlorinated solvents (Ref. 3, p. 0980).

The building was previously occupied by Hazen Transport, a local transportaion and logistic company that used the building as a warehouse and a parking lot (Ref. 3, pp. 0980, 1006).Prior to Hazen Transport, Dygert Seating occupied the building (Ref. 3, pp. 0982, 1006). Please see discussion of Dygert Seating in the "Possible Sources of Ground Water Plume" discussion in Section 2 of this HRS documentation record.

Hadley Products
2503 Marina Drive, Elkhart, Indiana (Ref. 3, p. 0771)

This business unit designs, develops, tests, markets, and manufactures products for the RV and motor coach markets. The facility specializes in the manufacturing of air horns, electric horns, height control valves, mini air compressors, mirrors, smart air management system, tour coaches, and transit interior systems. The human resource manager who has been at the company for two and a half years stated that the company has never used any chlorinated sovents (Ref. 3, p. 0984).

During the April 2008 SI sampling, elevated levels of TCE were detected in the shallow portions of the surface aquifer at a depth between 8-13 feet in an area located on the west side of the property at 2503 Marina Drive (Refer to ground water samples E2Q01, E2Q95, E2Q42, and E2PZ6 found in Section 3.1.1 of this HRS documentation record; Ref. 3, p. 0767). Ground water samples collected from the same portion of the aquifer upgradient to the above mentioned samples were found to contain no detections of VOCs (Refer to ground water samples E2Q60 and E2Q92 found in Section 2.2.2 of this HRS documentation record; Ref. 3, p. 0767). Please see discussion of Dygert Seating in the "Possible Sources of Ground Water Plume" discussion in Section 2 of this HRS documentation record.

Shepherd Distributing Company
2505 Marina Drive, Elkhart, Indiana (Ref. 3, p. 0771)

The company distributes building material for the recreational vehicle and the manufactured housing industry (Ref. 3, p. 1002). Shepherd manufacture a coated paper utilizing a water soluble tar-acrylic mixture coating (Ref. 3, p. 1002).

Prior to Shepherd Distributing, the business that occupied the building was Valhalla Foam (Ref. 3, p. 1002). Valhalla Foam was a distributor of cut foam (Ref. 3, p. 1002). Prior to Valhalla Foam, Dygert Seating occupied the building (Ref. 3, pp. 0955, 0985, 0986, 1002). Please see discussion of Dygert Seating in the "Possible Sources of Ground Water Plume" discussion in Section 2 of this HRS documentation record.

Riverside Tool Corporation
3504 Henke Street (formerly 23575 County Road 106), Elkart, Indiana (Ref. 3, pp. 0771, 0997, 1009)

Riverside Tool Corporation manufactures cutting tools for moulding and wood products (Ref. 3, pp. 0997, 1011). MSDS that were provided for these fluids indicate no chlorinated compounds are present in these products (Ref. 74, pp. 0001A through 0006).

This facility has been at the current address since 2004 (Ref. 3, p. 1011). The company uses water soluble coolants and other liquids that are containerized and removed for property disposal (Ref. 3, pp. 0997, 1011). Riverside Tool purchased the building from ETS in 2004, and leases the front half of the building to ETS (Ref. 3, pp. 0997, 1011). Please see discussion of ETS in the "Possible Sources of Ground Water Plume" discussion in Section 2 of this documentation record.

Alliance Plastics
(formerly 53057 Marina Drive), Elkhart, Indiana (Refs. 62, p. 0001A; 63, pp.0002, 0005, 0006)

A 10/30/95 inspection revealed no county violations. A list of substances used at the facility include methylene chloride, stoddard solvent, ethylene glycol, waste oil, hydraulic oil, thinner, and waste stoddard solvent. No chlorinated solvents were listed (Refs. 62, p. 0001A; 63, pp.0002, 0005, 0006).

Elkhart Metals Distributing
3506 Henke Street (formerly 23537 County Road 106), Elkhart, Indiana (Ref. 3, pp. 0771, 1020)

The facility buys, sells and manufactures steel proucts for Recreation Vehicles (RVs) and truck industry (Ref. 3, p. 1020, 1022). The facility employs 12 people (Ref. 44). The facility utilizes some cutting and minor welding machines (Ref. 3, p. 1020). The company uses water based cutting lubricant (Ref. 3, pp. 1020, 1022).MSDS that were provided for this fluid indicate that no chlorinated compounds are present in this product (Ref. 75, p. 0006 through 0009).

Kellmark Corporation
2501 Ada Drive (formerly 53465 Ada Drive), Elkhart, Indiana (Refs. 3, p. 0771; 62, pp. 0001A)

An inspection in May 2007, noted that one drum of spent solution was stored outside without secondary containment. The inspection noted that spent developer/fixer, various oils, isopropyl alcohol, various inks, paints, paint thinners, and other non-cholorinated liquids were present at the facility (Refs. 62, pp. 0001A, 0002; 66, pp. 0003, 0004, 0005, 0007, 0010).

X-treme Vinyl Solution
2506 Ada Drive (formerly 53386 Ada Drive), Elkhart, Indiana (Refs. 3, p. 0771; 62, p. 0002)

An April 25, 2005 inspection noted noncompliance regarding some 55-gallon drum storage requirements. No violations were noted on other inspections. Denatured alcohol and acrylic enamel reducer liquids were noted at the facility. A septic water sample was analyzed in February 2000. Toluene was detected in the septic sample (Refs. 62, p. 0002; 67, pp. 0002, 0003, 0011, 0012).

Kasa Supply
(formerly 53151 Marina Drive), Elkhart, Indiana (Refs. 62, p. 0002; 68, pp. 0002)

An August 1992 inspection revealed that the facility was discharging glue residue into a discharge pit via a pipe from the building. The facility was told to cease operations, remediate the area, and sample the discharge. Analysis revealed the presence of dichlorodifluorethane, butylbenzene, p-isopropyltoluene, and m-, and p-xylenes (Refs. 62, p. 0002; 68, pp. 0002, 0003 0012, 0013, 0014).

Sherry Designs
(formerly 53387 Ada Drive), Elkhart, Indiana (Refs. 62, p. 0003, 73, p. 0002)

Inspection reports from 1997 indicate violations occurred at the facility regarding failure to register and failure to have secondary containment of outside storage drums. No violations were observed in the 1999 inspection reports. 1998 Hazardous/toxic substance inventory forms revealed that adhesives, adhesive catalyst, and spray adhesives were handled. Reports indicate that the facility was no longer in operation as of October, 2000 (Refs. 62, p. 0003; 73, pp. 0002, 0003, 0005, 0006, 0008, 0010).

J/R Weber Inc. (Weber Cabinets)
3507 Reedy Drive, Elkhart, Indiana (Ref. 3, p. 0771)

The facility is a cabinet manufacturer. Employees use Solvent 100 and a small amount of stain (Ref. 3, p. 1024).

Voyager, Inc.
2500 and 2502 Ada Drive, Elkhart, Indiana (Ref. 3, p. 0771)

Voyager Inc. was established in 1975 and is a manufacturer of precision metal products. The facility has been at this location since 1985 when the building was built (Ref. 3, p. 0996). The business is located in a 120,000 square-foot facility. The facility is a seating manufacturing company (Ref. 3, p. 0996).

Claude Lewis, an employee for 18 years, stated that no chlorinated solvents are currently used or have been used at this facility (Ref. 3, p. 0996).

Ashland Distribution Chemical of Indiana
3501 Cooper Drive, Elkart, Indiana (Ref. 3, p. 0771)

This facility is a distribution warehouse of polyester resins. The facility bulks off the resins from tank trucks and transfers them into drums. No manufacturing occurs at this facility. The plant manager stated that only basic cleaning supplies are used. A 30 ft. deep well is used for fire extinguishing purposes (Ref. 38, p. 001). Prior to Ashland, General Fiberglass operated at this location from 1988 to 1991. General Fiberglass conducted the same type of operations as Ashland Distribution Chemical does now (Ref. 3, p. 019).

Thetford/Norcold Inc. (Newmar Corp)
3503 Cooper Drive, Elkhart, Indiana (Ref. 3, p. 0771)

Thetford is a warehouse and distribution house for refrigerators, toilets for house and recreational vehicle manufacturing. A detailed inspection was denied. Thetford has been at this location since 1994 (Ref. 3, p. 1003).

Troeger Metal Works
2603 Marina Drive, Elkhart, Indiana (Ref. 3, p. 0771)

The facility employs six people. The facility has a city water supply. Troeger is a sheet metal fabricator which cuts, welds, and forms metal to customer specification. Troeger does not produce enough waste to qualify for waste stream status. General trash is disposed in a dumpster. A water-based lubricant is used during production (Ref. 3, p. 1004).

Tumacs LLC
3505 Cooper Drive, Elkhart, Indiana (Ref. 3, p. 0771)

Tumacs employs 9 people. The facility has a city water supply. Tumacs does canvas work for Bennington Covers and some carpet work for the recreational vehicle industry. Tumacs does not produce enough waste to qualify for waste stream status. General trash is their only output (Ref. 3, 1005).

Elkhart Hitch Shop
3502 Cooper Drive (formerly 23665 Cooper Drive), Elkhart, Indiana (Ref. 3, pp. 0771, 1007)

The facility employs three people. The facility has a private water supply. Elkhart hitch installs trailer hitches by bolting hitches to a vehicle for auto dealerships and individual automobile owners. The original business that operated out of this facility constructed engineered packaging and corrugated cardboard. Prior to Elkhart Hitch, the facility was used as a warehouse. Elkhart Hitch does not produce enough waste to qualify for waste stream status (Ref. 3, p. 1007).

Excel Electronics
2600 Marina Drive, Elkhart, Indiana (Ref. 3, p. 0771)

The facility employs 16 people. The facility has a city water supply. Excel designs, assembles, and tests circuit boards. Circuit boards are purchased from outside sources. Excel has operated at this location for 20 years. The prior company operating out of this building produced drapery for the recreational vehicle industry. Excel electronics does not produce enough waste to qualify for waste stream status. General trash is their only output (Ref. 3, p. 1008).

Select Wood Lumber & Building Products
2700 Ada Drive, Elkhart, Indiana (Ref. 3, p. 0771)

The company employs 9 people. The facility has a city water supply. The company is a saw shop that supplies wholesale lumber, plywood, and oriented strand board (OSB) to the recreational vehicle and manufactured housing and pallet construction industry. The company has been at this location for 12 months. Wood Creations operated out of this building prior to Select Wood Lumber. Prior to Wood Creations, an auto conversion company operated and produced small campers at this location. The byproducts of this saw shop include saw dust and irregular sized lumber pieces. The lumber pieces are given away and the saw dust is collected for disposal (Ref. 3, p. 1012).

Hazardous Substances Released

trans-1,2-DCE
cis-1,2-DCE
1,1,1-TCA
TCE
1,1-DCA
1,1-DCE
PCE

Ground Water Observed Release Factor Value: 550
(Ref. 1, Section 3.1.1, p. 51595)

3.1.2 POTENTIAL TO RELEASE

If an observed release can be established, the potential to release was not evaluated (Ref. 1, Section 3.1.2, p. 51595).

3.2 WASTE CHARACTERISTICS

3.2.1 TOXICITY/MOBILITY

The following toxicity, mobility and combined toxicity/mobility factor values have been assigned to those substances associated with Source No. 1, or present in the observed release, which have a containment value greater than 0 (see Section 2.2.2 of this HRS documentation record).

Hazardous Substance	Source / Observed Release	Toxicity Factor Value	Mobility Factor Value	Does Hazardous Substance Meet Observed Release by Chemical Analysis? (Y/N)	Toxicity / Mobility (Ref. 1, Table 3-9)	References
TCE	Source 1, Observed Release	10,000	1	Y	10,000	1, Section 3.2.1.3, p. 51602; 2, p. 058
1,1,1-TCA	Source 1, Observed Release	1	1	Y	1	1, Section 3.2.1.3, p. 51602; 2, p. 021
cis-1,2-DCE	Source 1, Observed Release	100	1	Y	100	1, Section 3.2.1.3, p. 51602; 2, p. 015
trans-1,2-DCE	Source 1, Observed Release	100	1	Y	100	1, Section 3.2.1.3, p. 51602; 2, p. 015
PCE	Source 1, Observed Released	100	1	Y	100	1, Section 3.2.1.3, p. 51602; 2, p. 020
1,1-DCE	Source 1, Observed Release	100	1	Y	100	1, Section 3.2.1.3, p. 51602; 2, p. 015
1,1-DCA	Source 1, Observed Release	10	1	Y	10	1, Section 3.2.1.3, p. 51602; 2, p. 014

All hazardous substances that meet the criteria for an observed release by chemical analysis to one or more aquifers underlying the source(s) at the site, regardless of the aquifer being evaluated, are assigned a mobility factor value of 1 (Ref. 1, Section 3.2.1.2, p. 51601).

Contaminant characteristic values for hazardous substances found in an observed release to the surficial aquifer were derived from the Superfund Chemical Data Matrix (SCDM) (Ref. 2). The hazardous substance with the highest toxicity/mobility factor value available to the ground water migration pathway is TCE (10,000).

Toxicity/Mobility Factor Value: 10,000
(Ref. 1, Section 3.2.1.3, p. 51602)

3.2.2 HAZARDOUS WASTE QUANTITY

Source No.	Source Type	Source Hazardous Waste Quantity
1	ground water plume	Unknown, but >0

The Lane Street Ground Water Contamination has been scored as a site consisting of a contaminated ground water plume with no identified source. According to Section 2.4.2.2 in the HRS, if any target sample for the migration pathway is subject to Level I (or Level II) concentrations, assign either the value from Table 2-6 (Ref. 1, p. 51591) or a value of 100, whichever is greater, as the hazardous waste quantity factor value for that pathway (Ref. 1, Section 2.4.2.2, p. 51592). Because Level I concentrations were present in a drinking water well (see Section 3.3.2.2 of this HRS documentation record), a hazardous waste quantity factor value of 100 is assigned for the ground water pathway.

Hazardous Waste Quantity Factor Value: 100
(Ref. 1, Section 2.4.2.2, p. 51592)

3.2.3 WASTE CHARACTERISTICS FACTOR CATEGORY VALUE

As specified in the HRS, the Hazardous Waste Quantity Factor Value of 100 was multiplied by the highest Toxicity/Mobility Factor Value of 10,000, resulting in a product of 1,000,000 (1.0E+06) (Ref. 1, Section 3.2.3, p. 51602). Based on this product, a Waste Characteristics Factor Category Value of 32 was assigned from Table 2-7 of the HRS (Ref. 1, Section 2.4.3.1, p. 51592).

Utilizing TCE which has the highest Toxicity/Mobility Factor Value of the substances listed in Section 3.2.1 of this HRS documentation record:

Toxicity/Mobility Factor Value: 10,000
Hazardous Waste Quantity Factor Value: 100

Toxicity/Mobility Factor Value (10,000) x
Hazardous Waste Quantity Factor Value (100): 1,000,000 = 1×10^6

Waste Characteristics Factor Category Value: 32
(Ref. 1, Table 2-7, p. 51592)

3.3 TARGETS

The primary targets are private residential drinking water wells. Eleven residential private wells are known to be subject to Level I contamination (See Section 3.1.1 of this HRS documentation record). Thirty three (33) people are known to be utilizing the water from these wells for drinking water (See Section 3.3.2.2 of this HRS documentation record).

3.3.1 NEAREST WELL

Sample ID: E2PS7
Level of Contamination (I, II, or potential): Level I
If potential contamination, distance from source in miles: Not applicable

Sample E2PS7 was obtained at a residence on Lane Street (Refs. 3, pp. 022, 0752, 0761; 4, p. 036). The water in the well at this location was found to contain TCE above the MCL and above the EPA established cancer risk screening concentration benchmark (Ref. 2, p. 058). This well is considered the nearest well (See Sections 2.2.2 and 3.1.1 of this HRS Documentation Record; Ref. 3, pp. 0752, 0761, 0765, 0767).

As specified in the HRS, if one or more drinking water wells are subject to Level I concentrations, a Nearest Well Factor Value of 50 is assigned (Ref. 1, Table 3-11, p. 51603). Level I concentrations have been documented in 11 drinking water wells. See Section 3.3.2.2 of this HRS documentation record.

Nearest Well Factor Value: 50
(Refs. 1, p. 51603, Table 3-11)

3.3.2 POPULATION

3.3.2.1 Level of Contamination

3.3.2.2 Level I Concentrations

Eleven drinking water wells contained Level I concentrations (See Section 3.1.1 of this HRS documentation record). The number of people served by the drinking water wells was documented on the sample field sheets at the time the ground water samples were obtained and/or from telephone calls made to the individual resident at each house by ECHD (Ref. 31).

The samples shown below include detections in drinking water wells that meet or exceed their corresponding benchmark concentrations. The lowest of the drinking water hazardous substance benchmarks for the detected compounds in drinking water samples was used to establish Level I contamination (i.e., cancer risk benchmark of 0.21 µg/L for TCE). An observed release to the Ground Water Migration Pathway has been established based on the detection of these compounds found in the drinking water (See Sections 2.2.2 and 3.1.1 of this HRS documentation record); thus, these wells are associated with Level I concentrations (Ref. 1, Sections 3.3.2.1, 3.3.2.2, p. 51603).

Level I Samples

The following table depicts the Level I samples, the hazardous substance and its concentration, the benchmark concentration, the type of benchmark, and the reference for the associated benchmark.

Property	Sample ID	Hazardous Substance	Hazardous Substance Concentration (µg/L)	Benchmark Concentration (µg/L)	Benchmark	Reference for Benchmark
1	E2PS7 LQ4539 LQ4598	TCE	7.6 7.9 7.0	0.21	Cancer Risk	2, p. 058
2	E2PT4 LQ4541 LQ4599	TCE	50 55 49	0.21	Cancer Risk	2, p. 058
3	E2PT1 LQ4601	TCE	9.9 21	0.21	Cancer Risk	2, p. 058
4	E2PS5 LQ4537 LQ4538 LQ4581	TCE	80 96 120 100	0.21	Cancer Risk	2, p. 058
5	E2PR2 LQ4540 LQ4582 LQ4583	TCE	300 300 300 320	0.21	Cancer Risk	2, p. 058
6	E2PQ2 E2PR0 LQ4584	TCE	220 330 300	0.21	Cancer Risk	2, p. 058
7	E2PQ8 LQ4585	TCE	200 160	0.21	Cancer Risk	2, p. 058
8	LQ4600	TCE	49	0.21	Cancer Risk	2, p. 058
9	E2PT0 LQ4602	TCE	2.5 1.1	0.21	Cancer Risk	2, p. 058
10	E2Q14 LQ4542 LQ4603	TCE	1.3 1.2 1.1	0.21	Cancer Risk	2, p. 058
11	LQ4586	TCE	27	0.21	Cancer Risk	2, p. 058

As specified in the HRS, the Level I concentration factor is the sum of the number of people served by drinking water from points of withdrawal subject to Level I concentrations (Ref. 1, Section 3.3.2.2, p. 51603). The total population counted from the eleven wells is 33 (see table below). The total of 33 was multiplied by 10 for a product of 330 (Ref. 1, Section 3.3.2.2, p. 51603).

Property	Level I Sample	Aquifer	Population	References
1	E2PS7 / LQ4539 / LQ4598	St. Joseph	5	3, pp. 022, 0752, 0761; 4, pp. 035, 036; 7, p. 15, 017, 23; 31, p. 001; 41, p. 03
2	E2PT4 / LQ4541 / LQ4599	St. Joseph	2	3, pp. 022, 0752, 0761; 4, pp. 043, 044; 7, p. 15, 018, 23; 31, p. 001; 41, p. 05
3	E2PT1 / LQ4601	St. Joseph	2	3, pp. 022, 0752, 0761; 4, p. 040; 7, p. 15, 018, 23; 31, p. 001
4	E2PS5 / LQ4537 / LQ4538 / LQ4581	St. Joseph	4	3, pp. 022, 0752, 0761; 4, p. 034; 7, p. 15, 016, 23; 31, p. 001; 41, pp. 01A, 02
5	E2PR2 / LQ4540 / LQ4582 / LQ4583	St. Joseph	4	3, pp. 021, 0752, 0761; 4, p. 021; 7, p. 15, 016, 23; 31, p. 001; 41, p. 04
6	E2PQ2/ E2PR0 / LQ4584	St. Joseph	4	3, pp. 021, 0752, 0761; 4, pp. 011, 019; 7, p. 15, 017, 23; 31, p. 001
7	E2PQ8 / LQ4585	St. Joseph	3	3, pp. 021, 0752, 0761; 4, p. 017; 7, p. 15, 017, 23; 31, p. 001
8	LQ4600	St. Joseph	3	7, pp. 15, 018, 23, 42; 31, p. 001
9	E2PT0 / LQ4602	St. Joseph	2	3, pp. 022, 0752, 0761; 4, p. 039; 7, p. 15, 018, 23; 31, p.001
10	E2Q14 / LQ4542 / LQ4603	St. Joseph	3	3, pp. 024, 0752, 0761; 4, p. 081; 7, p. 15, 018, 23; 31, p.001; 41, p. 06
11	LQ4586	St. Joseph	1	7, pp. 15, 017, 022, 023; 31, p. 001; 42, p. 16

Sum of Population Served by Level I Wells: 33
Sum of Population Served by Level I Wells x 10: 330

Level I Concentrations Factor Value: 330

3.3.2.3 Level II Concentrations

Since the site score is above 28.50 based upon Level I Concentrations, Level II Concentrations were not scored (NS) for this site.

Level II Concentration Factor Value: NS

3.3.2.4 Potential Contamination

Since the site score is above 28.50 based upon Level I Concentrations, Potential Contamination was not scored (NS) for this site.

Potential Contamination Factor Value: NS

3.3.3 RESOURCES

There is no information available indicating that there may be resource use of the surficial aquifer within the target distance limit of Lane Street Ground Water Contamination; therefore, a resources factor value of 0 is assigned (Ref. 1, Section 3.3.3, p. 51604).

Resources Factor Value: 0

3.3.4 WELLHEAD PROTECTION AREA

There is no Wellhead Protection Area where the ground water contamination exists (Refs. 1, Section 3.3.4, p. 51604; 26). Therefore, the Wellhead Protection Area factor value of 0 is assigned (Ref. 1, Section 3.3.4, p. 51604).

Wellhead Protection Area Factor Value: 0

ATTACHMENT B

Boring/Well Logs & Sample Field Sheets

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

PAGE ____ OF ____

SAMPLE FIELD SHEET *

GW116

Site Name: Lane Street
County: Elkhart
IDEM/OLQ Sample #: GW-X-8
Sample ID: GE2042
Collection Date: 4/16/08
Time: 5 :56 AM / (PM)

Sample Types (check all applicable): ☒ Mon. Well ☐ Res. Well ☐ Creek ☐ Leachate ☐ Ditch
☐ Drainage Tile ☐ Lagoon ☐ Pond ☐ Sludge ☐ Sediment ☐ Industrial Waste
☐ Waste Pile ☐ Soil ☐ Truck ☐ Solvent ☐ Oil ☐ Drummed Waste
☐ Waste Liquid ☐ Sand ☐ Ash ☐ Trip Blank ☐ Field Blank ☐ Equipment Blank
☐ Background ☐ MS/MSD ☐ Duplicate of _____ ☐ Other _____

Containers:	Volume	Material	Quantity	Preservative	Analysis
	40ml	glass	3	None	VOCs
	40 ml	glass	3	HCl	VOCs

Sample Location Information: (location marker, depth taken, flow rate, vegetation damage, wildlife present, etc.)
X- west of former Diggert facility off of door; north of ditch
screened at ; sampled at

For Well Samples: Well purged less than ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 12 ☐ 24 ☐ 48 hours prior to sampling.
Purged to dryness? ☐ Yes ☐ No Approx. ☐ 1 ☐ 2 ☒ 3 ☐ 5 ☐ >5 well volumes.

Sampling Equipment Used: peristaltic pump

Field Test Performed	Result	Field Test Performed	Result

Sample Appearance and Observations: (color, odor, clarity, suspended solids, reaction to preservatives, etc.)

Deviations from Sampling Plan:

Revision 09-11-00

Sampler Signature: [signature] **Date:** 4/16/08

* This form is for general use in OLQ sampling projects.

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FLEX01 00007892

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

PAGE ____ OF ____

SAMPLE FIELD SHEET *

GW117

Site Name: Lane Street
County: Elkhart
IDEM/OLQ Sample #: GW-X-8 dup
Sample ID: E20416
Collection Date: 4/16/08
Time: 5 : 56 AM (PM)

Sample Types (check all applicable): ☒ Mon. Well ☐ Res. Well ☐ Creek ☐ Leachate ☐ Ditch

☐ Drainage Tile ☐ Lagoon ☐ Pond ☐ Sludge ☐ Sediment ☐ Industrial Waste
☐ Waste Pile ☐ Soil ☐ Truck ☐ Solvent ☐ Oil ☐ Drummed Waste
☐ Waste Liquid ☐ Sand ☐ Ash ☐ Trip Blank ☐ Field Blank ☐ Equipment Blank
☐ Background ☐ MS/MSD ☒ Duplicate of E20412 ☐ Other ____

Containers:	Volume	Material	Quantity	Preservative	Analysis
	40 mL	glass	3	none	VOCs
	40 mL	glass	3	HCl	VOCs

Sample Location Information: (location marker, depth taken, flow rate, vegetation damage, wildlife present, etc.)
X - west of Diggert facility off of door; north of ditch
screened at ____ sampled at ____

For Well Samples: Well purged less than ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 12 ☐ 24 ☐ 48 hours prior to sampling.
Purged to dryness? ☐ Yes ☐ No Approx. ☐ 1 ☐ 2 ☒ 3 ☐ 5 ☐ >5 well volumes.

Sampling Equipment Used: peristaltic pump

Field Test Performed	Result	Field Test Performed	Result

Sample Appearance and Observations: (color, odor, clarity, suspended solids, reaction to preservatives, etc.)

Deviations from Sampling Plan:

Revision 09-11-00

Sampler Signature: [signature] **Date:** 4/16/08

* This form is for general use in OLQ sampling projects.

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FLEX01 00007893

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

PAGE ____ OF ____

SAMPLE FIELD SHEET *

55-5

Site Name: Lane St
County: Elkhart
IDEM/OLQ Sample #: 3-4
Sample ID: E2Q50
Collection Date: 4/17/08
Time: 10 : 01 (AM) / PM

Sample Types (check all applicable): ☐ Mon. Well ☐ Res. Well ☐ Creek ☐ Leachate ☐ Ditch

☐ Drainage Tile ☐ Lagoon ☐ Pond ☐ Sludge ☐ Sediment ☐ Industrial Waste
☐ Waste Pile ☒ Soil ☐ Truck ☐ Solvent ☐ Oil ☐ Drummed Waste
☐ Waste Liquid ☐ Sand ☐ Ash ☐ Trip Blank ☐ Field Blank ☐ Equipment Blank
☐ Background ☐ MS/MSD ☐ Duplicate of _____ ☐ Other _____

Containers:	Volume	Material	Quantity	Preservative	Analysis
	40ml	glass	1	n	VOCs
	jar	poly	1	n	VOCs
	5g	poly	3	n	VOCs

Sample Location Information: (location marker, depth taken, flow rate, vegetation damage, wildlife present, etc.)
at back door (W) of Nadley, depth 8ft

For Well Samples: Well purged less than ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 12 ☐ 24 ☐ 48 hours prior to sampling.
Purged to dryness? ☐ Yes ☐ No Approx. ☐ 1 ☐ 2 ☐ 3 ☐ 5 ☐ >5 well volumes.

Sampling Equipment Used: encore / 5035A ~~depth 8ft~~

Field Test Performed	Result	Field Test Performed	Result
PID	0		

Sample Appearance and Observations: (color, odor, clarity, suspended solids, reaction to preservatives, etc.)

Deviations from Sampling Plan: none

Revision 09-11-00

Sampler Signature: [signature] **Date:** 4/17/08

* This form is for general use in OLQ sampling projects.

Boring Number S- X

Logged By R. Raftis

Drilling Method D.P

Physical Settting Clear, Sunny
South of Ogert building
inside Prop. boundary

Date/Time Started 4/17 10:01 am
Date/Time Completed 10:30 am

Depth	% Recovery	Field Screening	Graphic	Written Description
				~~3/2.5YR~~
				0-2.5 Red (~~4~~/10YR) sand
2		0		75% sand, 25% silt
				2.5-3.5 Black (3/10YR) sand
4		0		75% sand 25% silt
				3.5-8 fine sand (4/10YR)
6		0		85% sand, 15% silt
8		0		wet @ 8 *sample from 6-8 ft
				8-10 Brown (4/10YR) sand. Well
10		0		sorted, rounded. 85% sand

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvironmental.net

BORING NUMBER: MW-13i

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/11/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	8:58	90	0.1	**TOPSOIL** Sandy. Dark Brown.		2	
2-5	8:59	90	0.0	**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4). Moist.		4	
5-7	9:03	90	0.1	**FINE/MEDIUM SAND** Fine Sand 80% and Medium Sand 20%. Trace amount of Silt. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 4.75'.		6	
7-10	9:04	90	0.2	At 5-6', Coarse Sand 20%. At 9.75', a layer of Coarse Sand and Gravel 10%.		8	
10-12	9:11	80	1.3	**COARSE SAND/GRAVEL** Gravel 5% to trace amounts, Fine Sand 40%, Coarse Sand 20%, and Medium Sand 40%. Moderate yellowish brown (10YR 5/4).		10	
12-15	9:12	80	0.4	Some blackish stains at 11-12' with less Coarse Sand.		12	
15-17	9:20	70	0.1	At 14.75-16', Gravel 10%.		14	
17-20	9:21	70	0.1	At 21-22' and 24.5-25', Gravel 30-40%. Some large Gravel.		16	
20-22	9:28	50	0.1	At 25-32', Gravel 50% with more Coarse Sand. Gray hue.		18	
22-25	9:29	50	0.0			20	
25-27	9:40	50	0.7			22	
27-30	9:41	50	0.1			24	
						26	
				End of Boring		28	
				Ground Water Sample Submitted for Lab Analysis.		30	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
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BORING NUMBER: MW-13s

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/11/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	8:58	90	0.1	**TOPSOIL** Sandy. Dark Brown. **SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4). Moist.		2	
2-5	8:59	90	0.0	**FINE/MEDIUM SAND** Fine Sand 80% and Medium Sand 20%. Trace amount of Silt. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 4.75'. At 5-6', Coarse Sand 20%. At 9.75', a layer of Coarse Sand and Gravel 10%.		4	
5-7	9:03	90	0.1			6	
7-10	9:04	90	0.2			8	
10-12	9:11	80	1.3	**COARSE SAND/GRAVEL** Gravel 5% to trace amounts, Fine Sand 40%, Coarse Sand 20%, and Medium Sand 40%. Moderate yellowish brown (10YR 5/4). Some blackish stains at 11-12' with less Coarse Sand.		10	
12-15	9:12	80	0.4	End of Boring		12	
				Ground Water Sample Submitted for Lab Analysis.		14	
						16	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
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Ph: (574) 537-0881
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BORING NUMBER: MW-10i

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/10/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	15:10	90	0.1	**TOPSOIL**			
2-5	15:11	90	0.2	**SILTY MEDIUM SAND** Silt 20% and Medium Sand 80%. Dusky yellowish brown (10YR 2/2).		2 4	
5-7	15:13	80	0.2	**FINE/MEDIUM SAND** Fine Sand 90% and Medium Sand 10%. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 5.25'. Some Silt at 6-6.5'.		6	
7-10	15:14	80	0.8	**COARSE/MEDIUM/FINE SAND** Fine Sand 40%, Coarse Sand 10%, and Medium Sand 50%. Moderate yellowish brown (10YR 5/4). More Fine Sand and less Medium Sand at 10-15'.		8 10	
10-12	15:19	80	0.8			12	
12-15	15:20	80	0.6			14	
15-17	15:27	80	1.0			16	
17-20	15:28	80	0.9	**MEDIUM/FINE/COARSE SAND** Coarse Sand 30%, Medium Sand 60%, and Fine Sand 10%. Trace amount of Gravel. Moderate yellowish brown (10YR 5/4).		18	
20-22	15:37	70	1.7	**COARSE SAND/GRAVEL** Gravel 10-20%, Coarse Sand 30%, Medium Sand 30%, and Fine Sand 30%. Some Iron stains at 20-21'.		20	
22-25	15:38	70	2.3	Less amounts of Gravel at 23-24.5'. Change to Gray at 25'.		22 24	
25-27	15:48	50	3.9			26	
27-30	15:49	50	7.6	At 29-32.5', Gravel 30-40%.		28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30 32	Bentonite

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
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BORING NUMBER: MW-10s

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/10/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	15:10	90	0.1	**TOPSOIL** **SILTY MEDIUM SAND** Silt 20% and Medium Sand 80%. Dusky yellowish brown (10YR 2/2).		2	
2-5	15:11	90	0.2			4	
5-7	15:13	80	0.2	**FINE/MEDIUM SAND** Fine Sand 90% and Medium Sand 10%. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 5.25'. Some Silt at 6-6.5'.		6	
7-10	15:14	80	0.8	**COARSE/MEDIUM/FINE SAND** Fine Sand 40%, Coarse Sand 10%, and Medium Sand 50%. Moderate yellowish brown (10YR 5/4). More Fine Sand and less Medium Sand at 10-15'.		8	
10-12	15:19	80	0.8			10	
12-15	15:20	80	0.6	End of Boring *Ground Water Sample Submitted for Lab Analysis.*		12	
						14	
						16	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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Ph: (574) 537-0881
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BORING NUMBER: MW-10is

Project Number: 11-10378-50

Surveyed (check if Yes): x
TOC Elevation = 767.34
X = 4285.5777
Y = 4368.2268

Client: Barnes & Thornburg
Project: Lane Street
Location: Elkhart, IN
Date: 9/5/2012

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface (Elev. =		0	
0-2				**TOPSOIL**			
2-5				**SILTY MEDIUM SAND** Silt 20% and Medium Sand 80%. Dusky yellowish brown (10YR 2/2).		2 4	
5-7				**FINE/MEDIUM SAND** Fine Sand 90% and Medium Sand 10%. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 5.25'. Some Silt at 6-6.5'.		6	
7-10				**COARSE/MEDIUM/FINE SAND** Fine Sand 40%, Coarse Sand 10%, and Medium Sand 50%. Moderate yellowish brown (10YR 5/4). More Fine Sand and less Medium Sand at 10-15'.		8	
10-12						10	
12-15						12 14	
15-17						16	
17-20				**MEDIUM/FINE/COARSE SAND** Coarse Sand 30%, Medium Sand 60%, and Fine Sand 10%. Trace amount of Gravel. Moderate yellowish brown (10YR 5/4).		18	
20-22				**COARSE SAND/GRAVEL** Gravel 10-20%, Coarse Sand 30%, Medium Sand 30%, and Fine Sand 30%. Some Iron stains at 20-21'.		20	
22-25				Less amounts of Gravel at 23-24.5'. Change to gray at 25'.		22 24	
25-27						26	
27-30						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30 32	

Geology description taken from previous Geoprobe boring done on November 9, 2011.

Drilling Method: 6620DT Geoprobe **Logged By:** DDJ **Page:** 1 of 1

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
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Ph: (574) 537-0881
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BORING NUMBER: MW-10iu

Project Number: **11-10378-50**

Surveyed (check if Yes): x
TOC Elevation = 767.35
X = 4286.2970
Y = 4367.7909

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/5/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2				**TOPSOIL**			
2-5				**SILTY MEDIUM SAND** Silt 20% and Medium Sand 80%. Dusky yellowish brown (10YR 2/2).		2 4	
5-7				**FINE/MEDIUM SAND** Fine Sand 90% and Medium Sand 10%. Moderate brown (5YR 3/4) to moderate yellowish brown (10YR 5/4). Wet at 5.25'. Some Silt at 6-6.5'.		6	
7-10				**COARSE/MEDIUM/FINE SAND** Fine Sand 40%, Coarse Sand 10%, and Medium Sand 50%. Moderate yellowish brown (10YR 5/4). More Fine Sand and less Medium Sand at 10-15'.		8	
10-12						10	
12-15						12 14	
15-17						16	
17-20				**MEDIUM/FINE/COARSE SAND** Coarse Sand 30%, Medium Sand 60%, and Fine Sand 10%. Trace amount of Gravel. Moderate yellowish brown (10YR 5/4).		18	
20-22				**COARSE SAND/GRAVEL** Gravel 10-20%, Coarse Sand 30%, Medium Sand 30%, and Fine Sand 30%. Some Iron stains at 20-21'.		20	
22-25				Less amounts of Gravel at 23-24.5'. Change to gray at 25'.		22 24	
25-27						26	
27-30						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30 32	

Geology description taken from previous Geoprobe boring done on November 9, 2011.

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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BORING NUMBER: MW-11i

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/9/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	11:24	90	0.1	**TOPSOIL** Silty Sand. Dark Brown.		2	
2-5	11:25	90	0.1	**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4).		4	
5-7	11:28	90	0.1	**FINE/MEDIUM/COARSE SAND** Fine Sand 60%, Medium Sand 30%, and Coarse Sand 10%. Moderate yellowish brown (10YR 5/4). Wet at 5.25'. More Fine Sand after 6.5'. At 13.75', a 6" layer of Coarse Sand 30% and Gravel 5%.		6 8 10 12 14	
7-10	11:29	90	1.5				
10-12	11:35	80	1.2				
12-15	11:36	80	2.0				
15-17	11:42	70	3.2	**COARSE SAND/GRAVEL** Gravel 10%, Fine Sand 30%, Coarse Sand 30%, and Medium Sand 30%. Moderate yellowish brown (10YR 5/4). Trace amount of Gravel at 18-19'.		16 18 20	
17-20	11:43	70	4.4				
20-22	11:50	80	1.1				
22-25	11:51	80	1.8	**MEDIUM/FINE/COARSE SAND** Coarse Sand 10%, Medium Sand 30%, and Fine Sand 60%. Trace amount of Gravel.		22 24	
25-27	11:59	60	6.2	**COARSE SAND/GRAVEL** Gravel 30%, Coarse Sand 20%, Medium Sand 30%, and Fine Sand 20%. Some large Gravel. Moderate yellowish brown (10YR 5/4). Trace amount of Gravel at 28-28.5'. Gray hue at 28'.		26 28	
27-30	12:00	60	5.1	End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30 32	Bentonite

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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BORING NUMBER: MW-11s

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/9/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	11:24	90	0.1	**TOPSOIL** Silty Sand. Dark Brown.		2	
2-5	11:25	90	0.1	**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4).		4	
5-7	11:28	90	0.1	**FINE/MEDIUM/COARSE SAND** Fine Sand 60%, Medium Sand 30%, and Coarse Sand 10%. Moderate yellowish brown (10YR 5/4). Wet at 5.25'. More Fine Sand after 6.5'.		6	
7-10	11:29	90	1.5			8	
10-12	11:35	80	1.2			10	
12-15	11:36	80	2.0	End of Boring *Ground Water Sample Submitted for Lab Analysis.*		12 14	
						16	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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2112 Carmen Court
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BORING NUMBER: MW-11ss

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-30**

Date: **11/28/2011**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2	11:24	90	0.1	**TOPSOIL** Silty Sand. Dark Brown.			
2-5	11:25	90	0.1	**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4).		2	
5-7	11:28	90	0.1	**FINE/MEDIUM/COARSE SAND** Fine Sand 60%, Medium Sand 30%, and Coarse Sand 10%. Moderate yellowish brown (10YR 5/4). Wet at 5.25'. More Fine Sand after 6.5'. At 13.75', a 6" layer of Coarse Sand 30% and Gravel 5%.		4	
7-10	11:29	90	1.5	End of Boring *Ground Water Sample Submitted for Lab Analysis.*		6 8 10	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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Ph: (574) 537-0881
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BORING NUMBER: MW-11is

Client: **Barnes & Thornburg**

Project: **Lane Street**

Location: **Elkhart, IN**

Project Number: **11-10378-50**

Date: **10/17/12**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID/PID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2				**TOPSOIL** Silty Sand. Dark Brown.			
2-5				**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4).		2	
				FINE/MEDIUM/COARSE SAND Fine Sand 60%, Medium Sand 30%, and Coarse Sand 10%. Moderate yellowish brown (10YR 5/4). More Fine Sand after 6.5'.		4	
5-7						6	
7-10						8	
						10	
				End of Boring			
				Ground Water Sample Submitted for Lab Analysis.		12	

Monitoring Well set based on November 9th, 2011, geologic boring.

Bentonite

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvironmental.net

BORING NUMBER: MW-11iu

Client: **Barnes & Thornburg**

Project: **Lane Street**

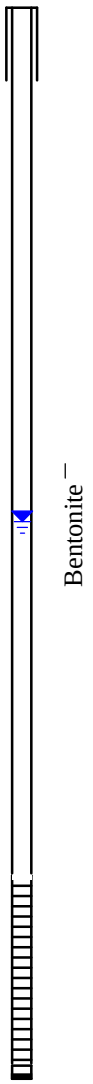
Location: **Elkhart, IN**

Project Number: **11-10378-50**

Date: **10/17/12**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID/PID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface		0	
0-2				**TOPSOIL** Silty Sand. Dark Brown.			
2-5				**SILTY FINE SAND** Silt 20% and Fine Sand 80%. Moderate brown (5YR 3/4).		2	
				FINE/MEDIUM/COARSE SAND Fine Sand 60%, Medium Sand 30%, and Coarse Sand 10%. Moderate yellowish brown (10YR 5/4). More Fine Sand after 6.5'. At 13.75', a 6" layer of Coarse Sand 30% and Gravel 5%.		4	
5-7						6	
7-10						8	
10-12						10	
12-14						12	
				End of Boring		14	
				Ground Water Sample Submitted for Lab Analysis.		16	

Monitoring Well set based on November 9th, 2011, geologic boring.



Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
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Goshen, Indiana
Ph: (574) 537-0881
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BORING NUMBER: MW-14i

Project Number: **11-10378-50**

Surveyed (check if Yes): [x]
TOC Elevation = 767.61
X = 4282.3669
Y = 4246.4648

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/6/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	8:26	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 30% with Medium and Fine Sand. Some Gravel. Moderate brown (5YR 3/4).		2	
2-5	8:27	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4). Some Topsoil intermixed. An 8" layer of Topsoil at 2.5'.		4	
5-7	8:32	90	0.0	**FINE/MEDIUM SAND** Fine Sand 70% and Medium Sand 30%. Some Silt. Moderate yellowish brown (10YR 5/4). Wet at 5.5-5.75'. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2) from 6-10'. Some Iron stains at 7.5'. Medium Sand 40% at 10-14'.		6	
7-10	8:33	90	0.0			8	
10-12	8:40	60	0.6			10	
12-15	8:41	60	0.4			12	
15-17	8:51	90	0.4	**COARSE SAND/GRAVEL** Gravel 10%, Fine Sand 30%, Coarse Sand 30%, and Medium Sand 30%. Gray to pale yellowish brown (10YR 6/2). Some angular Coarse Sand and Gravel. Gravel 20% at 17.5-18.5'.		14	
17-20	8:52	90	0.2			16	
20-22	9:02	80	0.3			18	
22-25	9:03	80	0.5			20	
25-27	9:15	70	0.5	**MEDIUM/FINE SAND** Medium Sand 40% and Fine Sand 60%. Trace amount of Coarse Sand. Gray to pale yellowish brown (10YR 6/2).		22	
27-30	9:16	70	0.6	**COARSE SAND/GRAVEL** Gravel 10-20% and Coarse Sand 80%, with Fine/Medium Sand. A 0.25" black layer at 24'. Gravel 30% at 28.5-30'.		24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

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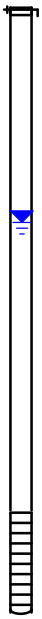
BORING NUMBER: MW-14is

Project Number: **11-10378-50**

Surveyed (check if Yes): [x]
TOC Elevation = 767.64
X = 4284.5331
Y = 4245.0990

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/6/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	8:26	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 30% with Medium and Fine Sand. Some Gravel. Moderate brown (5YR 3/4).		2	
2-5	8:27	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4). Some Topsoil intermixed. An 8" layer of Topsoil at 2.5'.		4	
5-7	8:32	90	0.0	**FINE/MEDIUM SAND** Fine Sand 70% and Medium Sand 30%. Some Silt. Moderate yellowish brown (10YR 5/4). Wet at 5.5-5.75'. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2) from 6-10'. Some Iron stains at 7.5'. Medium Sand 40% at 10-14'.		6	
7-10	8:33	90	0.0			8	
10-12	8:40	60	0.6			10	
12-15	8:41	60	0.4			12	
15-17	8:51	90	0.4	**COARSE SAND/GRAVEL** Gravel 10%, Fine Sand 30%, Coarse Sand 30%, and Medium Sand 30%. Gray to pale yellowish brown (10YR 6/2). Some angular Coarse Sand and Gravel. Gravel 20% at 17.5-18.5'.		14	
17-20	8:52	90	0.2			16	
20-22	9:02	80	0.3			18	
22-25	9:03	80	0.5	**MEDIUM/FINE SAND** Medium Sand 40% and Fine Sand 60%. Trace amount of Coarse Sand. Gray to pale yellowish brown (10YR 6/2).		20	
25-27	9:15	70	0.5	**COARSE SAND/GRAVEL** Gravel 10-20% and Coarse Sand 80%, with Fine/Medium Sand. A 0.25" black layer at 24'. Gravel 30% at 28.5-30'.		22	
27-30	9:16	70	0.6			24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	



Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

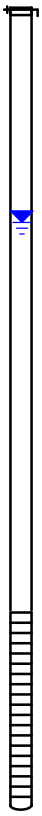
BORING NUMBER: MW-14iu

Project Number: **11-10378-50**

Surveyed (check if Yes): [x]
TOC Elevation = 767.58
X = 4283.4196
Y = 4245.7121

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/6/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	8:26	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 30% with Medium and Fine Sand. Some Gravel. Moderate brown (5YR 3/4).		2	
2-5	8:27	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4). Some Topsoil intermixed. An 8" layer of Topsoil at 2.5'.		4	
5-7	8:32	90	0.0	**FINE/MEDIUM SAND** Fine Sand 70% and Medium Sand 30%. Some Silt. Moderate yellowish brown (10YR 5/4). Wet at 5.5-5.75'. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2) from 6-10'.		6	
7-10	8:33	90	0.0			8	
10-12	8:40	60	0.6	Some Iron stains at 7.5'. Medium Sand 40% at 10-14'.		10	
12-15	8:41	60	0.4			12	
15-17	8:51	90	0.4	**COARSE SAND/GRAVEL** Gravel 10%, Fine Sand 30%, Coarse Sand 30%, and Medium Sand 30%. Gray to pale yellowish brown (10YR 6/2). Some angular Coarse Sand and Gravel.		14	
17-20	8:52	90	0.2	Gravel 20% at 17.5-18.5'.		16	
20-22	9:02	80	0.3			18	
22-25	9:03	80	0.5			20	
25-27	9:15	70	0.5	**MEDIUM/FINE SAND** Medium Sand 40% and Fine Sand 60%. Trace amount of Coarse Sand. Gray to pale yellowish brown (10YR 6/2).		22	
27-30	9:16	70	0.6	**COARSE SAND/GRAVEL** Gravel 10-20% and Coarse Sand 80%, with Fine/Medium Sand. A 0.25" black layer at 24'. Gravel 30% at 28.5-30'.		24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	



Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

BORING NUMBER: MW-14ss

Project Number: **11-10378-50**

Surveyed (check if Yes): [x]
TOC Elevation = 767.65
X = 4283.9542
Y = 4248.8295

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/6/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	8:26	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 30% with Medium and Fine Sand. Some Gravel. Moderate brown (5YR 3/4).		2	
2-5	8:27	90	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4). Some Topsoil intermixed. An 8" layer of Topsoil at 2.5'.		4	
5-7	8:32	90	0.0	**FINE/MEDIUM SAND** Fine Sand 70% and Medium Sand 30%. Some Silt. Moderate yellowish brown (10YR 5/4). Wet at 5.5-5.75'. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2) from 6-10'. Some Iron stains at 7.5'. Medium Sand 40% at 10-14'.		6	
7-10	8:33	90	0.0			8	
10-12	8:40	60	0.6			10	
12-15	8:41	60	0.4			12	
15-17	8:51	90	0.4	**COARSE SAND/GRAVEL** Gravel 10%, Fine Sand 30%, Coarse Sand 30%, and Medium Sand 30%. Gray to pale yellowish brown (10YR 6/2). Some angular Coarse Sand and Gravel. Gravel 20% at 17.5-18.5'.		14	
17-20	8:52	90	0.2			16	
20-22	9:02	80	0.3			18	
22-25	9:03	80	0.5			20	
25-27	9:15	70	0.5	**MEDIUM/FINE SAND** Medium Sand 40% and Fine Sand 60%. Trace amount of Coarse Sand. Gray to pale yellowish brown (10YR 6/2).		22	
27-30	9:16	70	0.6	**COARSE SAND/GRAVEL** Gravel 10-20% and Coarse Sand 80%, with Fine/Medium Sand. A 0.25" black layer at 24'. Gravel 30% at 28.5-30'.		24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

BORING NUMBER: MW-15i

Project Number: 11-10378-50

Surveyed (check if Yes): x
TOC Elevation = 768.57
X = 4240.1996
Y = 4278.6862

Client: Barnes & Thornburg
Project: Lane Street
Location: Elkhart, IN
Date: 9/5/2012

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface (Elev. =		0	
0-2	9:38	90	0.0	**TOPSOIL** Silt 60% and Fine Sand 40%. Dusky yellowish brown (10YR 2/2). Moist to dry.		2	
2-5	9:39	90	0.0			4	
5-7	9:43	80	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4).		6	
7-10	9:44	80	0.1	**FINE/MEDIUM SAND** Fine Sand 50% and Medium Sand 50%. Trace amount of Coarse Sand. Moderate yellowish brown (10YR 5/4). Some Iron stains at 5-7'. Wet at 7.75'. At 9-10', Medium Sand 80%. From 10-15.5', Fine Sand 70% and Medium Sand 30%.		8	
10-12	9:49	80	0.1			10	
12-15	9:50	80	0.2			12	
15-17	9:57	60	0.2			14	
17-20	9:58	60	0.5	**COARSE SAND/GRAVEL** Gravel 20%, Fine Sand 20%, Coarse Sand 30%, and Medium Sand 30%. Pale yellowish brown (10YR 6/2).		16	
20-22	10:05	70	0.1			18	
22-25	10:06	70	0.2	**MEDIUM/FINE SAND** Medium Sand 30% and Fine Sand 70%. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2).		20	
25-27	10:18	70	0.1			22	
27-30	10:19	70	0.4	**COARSE SAND/GRAVEL** At 24.25-25.95, Gravel 30-40%, with Fine/Medium Sand. At 29.5-30', Gravel 30-40%. All Gray 26-30'.		24	
						26	
						28	
				End of Boring		30	
				Ground Water Sample Submitted for Lab Analysis.		32	

Drilling Method: 6620DT Geoprobe **Logged By:** DDJ

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

BORING NUMBER: MW-15is

Project Number: **11-10378-50**

Surveyed (check if Yes): [x]
TOC Elevation = 768.49
X = 4242.4448
Y = 4277.9563

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/5/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	9:38	90	0.0	**TOPSOIL** Silt 60% and Fine Sand 40%. Dusky yellowish brown (10YR 2/2). Moist to dry.		2	
2-5	9:39	90	0.0			4	
5-7	9:43	80	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4).		6	
7-10	9:44	80	0.1	**FINE/MEDIUM SAND** Fine Sand 50% and Medium Sand 50%. Trace amount of Coarse Sand. Moderate yellowish brown (10YR 5/4). Some Iron stains at 5-7'. Wet at 7.75'. At 9-10', Medium Sand 80%. From 10-15.5', Fine Sand 70% and Medium Sand 30%.		8	
10-12	9:49	80	0.1			10	
12-15	9:50	80	0.2			12	
15-17	9:57	60	0.2			14	
17-20	9:58	60	0.5	**COARSE SAND/GRAVEL** Gravel 20%, Fine Sand 20%, Coarse Sand 30%, and Medium Sand 30%. Pale yellowish brown (10YR 6/2).		16	
20-22	10:05	70	0.1			18	
22-25	10:06	70	0.2	**MEDIUM/FINE SAND** Medium Sand 30% and Fine Sand 70%. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2).		20	
25-27	10:18	70	0.1			22	
27-30	10:19	70	0.4	**COARSE SAND/GRAVEL** At 24.25-25.95, Gravel 30-40%, with Fine/Medium Sand. At 29.5-30', Gravel 30-40%. All Gray 26-30'.		24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	

Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

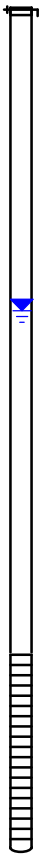
BORING NUMBER: MW-15iu

Project Number: **11-10378-50**

Surveyed (check if Yes): x
TOC Elevation = 768.50
X = 4241.3571
Y = 4278.3900

Client: **Barnes & Thornburg**
Project: **Lane Street**
Location: **Elkhart, IN**
Date: **9/5/2012**

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface *(Elev. =*		0	
0-2	9:38	90	0.0	**TOPSOIL** Silt 60% and Fine Sand 40%. Dusky yellowish brown (10YR 2/2). Moist to dry.		2	
2-5	9:39	90	0.0			4	
5-7	9:43	80	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4).		6	
7-10	9:44	80	0.1	**FINE/MEDIUM SAND** Fine Sand 50% and Medium Sand 50%. Trace amount of Coarse Sand. Moderate yellowish brown (10YR 5/4). Some Iron stains at 5-7'. Wet at 7.75'. At 9-10', Medium Sand 80%. From 10-15.5', Fine Sand 70% and Medium Sand 30%.		8	
10-12	9:49	80	0.1			10	
12-15	9:50	80	0.2			12	
15-17	9:57	60	0.2			14	
17-20	9:58	60	0.5	**COARSE SAND/GRAVEL** Gravel 20%, Fine Sand 20%, Coarse Sand 30%, and Medium Sand 30%. Pale yellowish brown (10YR 6/2).		16	
20-22	10:05	70	0.1			18	
22-25	10:06	70	0.2	**MEDIUM/FINE SAND** Medium Sand 30% and Fine Sand 70%. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2).		20	
25-27	10:18	70	0.1			22	
27-30	10:19	70	0.4	**COARSE SAND/GRAVEL** At 24.25-25.95, Gravel 30-40%, with Fine/Medium Sand. At 29.5-30', Gravel 30-40%. All Gray 26-30'.		24	
						26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	



Drilling Method: **6620DT Geoprobe** *Logged By:* **DDJ** *Page:* **1 of 1**

ROBERTS ENVIRONMENTAL SERVICES, LLC
2112 Carmen Court
Goshen, Indiana
Ph: (574) 537-0881
www.robertsenvserv.com

BORING NUMBER: MW-15ss

Project Number: 11-10378-50

Surveyed (check if Yes): x
TOC Elevation = 768.40
X = 4243.1250
Y = 4280.2357

Client: Barnes & Thornburg
Project: Lane Street
Location: Elkhart, IN
Date: 9/5/2012

SAMPLE INFORMATION				SUBSURFACE PROFILE			
Sample I.D.	Time	Recovery (%)	FID (ppm)	Lithologic Description	Symbol	Depth	Well Completion
				Ground Surface (Elev. =		0	
0-2	9:38	90	0.0	**TOPSOIL** Silt 60% and Fine Sand 40%. Dusky yellowish brown (10YR 2/2). Moist to dry.		2	
2-5	9:39	90	0.0			4	
5-7	9:43	80	0.0	**SILTY MEDIUM/FINE SAND** Silt 20-30% with Medium and Fine Sand. Moderate yellowish brown (10YR 5/4).		6	
7-10	9:44	80	0.1	**FINE/MEDIUM SAND** Fine Sand 50% and Medium Sand 50%. Trace amount of Coarse Sand. Moderate yellowish brown (10YR 5/4). Some Iron stains at 5-7'. Wet at 7.75'. At 9-10', Medium Sand 80%. From 10-15.5', Fine Sand 70% and Medium Sand 30%.		8	
10-12	9:49	80	0.1			10	
12-15	9:50	80	0.2			12	
15-17	9:57	60	0.2			14	
17-20	9:58	60	0.5			16	
20-22	10:05	70	0.1	**COARSE SAND/GRAVEL** Gravel 20%, Fine Sand 20%, Coarse Sand 30%, and Medium Sand 30%. Pale yellowish brown (10YR 6/2).		18	
22-25	10:06	70	0.2			20	
25-27	10:18	70	0.1	**MEDIUM/FINE SAND** Medium Sand 30% and Fine Sand 70%. Moderate yellowish brown (10YR 5/4) to pale yellowish brown (10YR 6/2).		22	
27-30	10:19	70	0.4			24	
				COARSE SAND/GRAVEL At 24.25-25.95, Gravel 30-40%, with Fine/Medium Sand. At 29.5-30', Gravel 30-40%. All Gray 26-30'.		26	
						28	
				End of Boring *Ground Water Sample Submitted for Lab Analysis.*		30	
						32	

Drilling Method: 6620DT Geoprobe **Logged By:** DDJ

ATTACHMENT C

ROBERTS Summary of Ground Water Analytical Results

SUMMARY OF GROUND WATER ANALYTICAL RESULTS
LANE STREET AREA OF GROUND WATER CONTAMINATION
Ground Water - Through September 2012

Vertical Aquifer Screening ("VAS") SAMPLE ID	GW-1 (10)	GW-1(20)	GW-1 (40)	GW-2 (10)	GW-2(20)	GW-2 (40)	GW-3 (10)	GW-3(20)	GW-3 (40)	GW-4 (10)	GW-4(20)	GW-4 (40)	GW-5 (10)	GW-5(20)	GW-5 (40)	GW-6 (10)	GW-6(20)	GW-6 (40)	GW-7 (10)	GW-7(20)	GW-7 (40)	GW-8 (10)	GW-8(20)	GW-8 (30)	GW-8 (40)	GW-9 (10)	GW-9(20)	GW-9 (30)	GW-9 (40)
SAMPLE DATE	3/29/2011			3/29/2011			3/29/2011			3/29/2011			3/29/2011			3/29/2011			3/29/2011			3/30/2011				3/30/2011			
LOCATION	North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.				North of Cooper Dr.			
DEPTH (feet)	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	27-31	38-42	2-12	18-22	27-31	38-42
Trichloroethylene (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.0**	ND	ND	**15.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Vertical Aquifer Screening ("VAS") SAMPLE ID	GW-10 (10)	GW-10 (20)	GW-10 (30)	GW-10 (40)	GW-11 (10)	GW-11 (20)	GW-11 (30)	GW-11 (40)	GW-12 (10)	GW-12(20)	GW-12 (40)	GW-13 (10)	GW-13(20)	GW-13 (40)	GW-14 (10)	GW-14(20)	GW-14 (40)	GW-15 (10)	GW-15(20)	GW-15 (40)	GW-16 (10)	GW-16(20)	GW-16 (40)	GW-17 (10)	GW-17(20)	GW-17 (40)	GW-18 (10)	GW-18(20)	GW-18 (40)
SAMPLE DATE	3/30/2011				3/30/2011				3/30/2011			3/30/2011			3/30/2011			3/30/2011			3/31/2011			3/31/2011			3/31/2011		
LOCATION	North of Cooper Dr.				North of Cooper Dr.				North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.			North of Cooper Dr.		
DEPTH (feet)	2-12	18-22	27-31	38-42	2-12	18-22	27-31	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42	2-12	18-22	38-42
Trichloroethylene (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.0**	ND	**5.9**	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Vertical Aquifer Screening ("VAS") SAMPLE ID	GW-19 (10)	GW-19(20)	GW-19 (40)	GW-1 (13)	GW-1 (26)	GW-1 (36)	GW-2 (13)	GW-2 (26)	GW-2 (36)	GW-3 (13)	GW-3 (26)	GW-3 (36)	GW-4 (13)	GW-4 (26)	GW-4 (36)	GW-5 (13)	GW-5 (26)	GW-5 (36)	GW-6 (13)	GW-6 (26)	GW-6 (36)	GW-7 (13)	GW-7 (26)	GW-7 (36)	GW-7 (44)	GW-8 (13)	GW-8 (26)	GW-8 (36)	GW-8 (44)
SAMPLE DATE	3/31/2011			10/25/2011			10/25/2011			10/25/2011			10/25/2011			10/26/2011			10/26/2011			10/26/2011				10/26/2011			
LOCATION	North of Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.				3507 Cooper Dr.			
DEPTH (feet)	2-12	18-22	38-42	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	40-44	3-13	22-26	32-36	40-44
Trichloroethylene (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**7.3**	ND	ND	**72**	**6.0**	ND	**18 (17)**	ND	ND	ND	**57**	ND	ND
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Vertical Aquifer Screening ("VAS") SAMPLE ID	GW-9 (13)	GW-9 (26)	GW-9 (36)	GW-10 (13)	GW-10 (26)	GW-10 (36)	GW-11 (13)	GW-11 (26)	GW-11 (36)	GW-12 (13)	GW-12 (26)	GW-12 (36)	GW-12 (44)	GW-13 (13)	GW-13 (26)	GW-13 (36)	GW-14 (13)	GW-14 (26)	GW-14 (36)	GW-15 (13)	GW-15 (26)	GW-15 (36)	GW-16 (13)	GW-16 (28)	GW-16 (40)
SAMPLE DATE	10/26/2011			10/26/2011			10/26/2011			10/26/2011				10/27/2011			10/27/2011			10/27/2011			10/27/2011		
LOCATION	3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.				3507 Cooper Dr.			3507 Cooper Dr.			3505 Cooper Dr.			2503 Marina Dr.		
DEPTH (feet)	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	40-44	3-13	22-26	32-36	3-13	22-26	32-36	3-13	22-26	32-36	3-13	24-28	36-40
Trichloroethylene (TCE)	ND	**5.0**	ND	ND	ND	ND	ND	ND	ND	ND	**6.5 (6.5)**	ND	ND	ND	**5.0**	ND	ND	**78**	**8.6**	ND	**26**	ND	ND	ND	ND
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	**6.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.0**	ND	ND	ND	ND	ND	ND	ND

SUMMARY OF GROUND WATER ANALYTICAL RESULTS
LANE STREET AREA OF GROUND WATER CONTAMINATION
Ground Water - Through September 2012

Vertical Aquifer Screening ("VAS") SAMPLE ID	GW-17 (13)	GW-17 (26)	GW-17 (36)	GW-18 (13)	GW-18 (28)	GW-18 (40)	GW-19 (13)	GW-19 (28)	GW-19 (40)	GW-20 (13)	GW-20 (28)	GW-20 (40)	GW-21 (13)	GW-21 (28)	GW-21 (40)	GW-22 (13)	GW-22 (28)	GW-22 (40)	GW-23 (13)	GW-23 (28)	GW-23 (40)	GW-23 (59)	GW-24 (10)	GW-24 (28)	GW-24 (40)	GW-25 (10)	GW-25 (28)	GW-25 (40)
SAMPLE DATE	10/28/2011			10/28/2011			10/28/2011			10/28/2011			10/28/2011			10/28/2011			10/28/2011				7/13/2012			7/13/2012		
LOCATION	2505 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.				2503 Marina Dr.			2503 Marina Dr.		
DEPTH (feet)	3-13	22-26	32-36	3-13	24-28	36-40	3-13	24-28	36-40	3-13	24-28	36-40	3-13	24-28	36-40	3-13	24-28	36-40	3-13	24-28	36-40	55-59	5-10	24-28	36-40	5-10	24-28	36-40
Trichloroethylene (TCE)	ND	ND	ND	ND	**73**	ND	ND	**35** (36)	ND	ND	ND	ND	ND	ND	ND	ND	**40**	**8.6**	ND	**140**	**9.2**	**8.8**	ND	**24**	**4.2**	ND	ND	ND
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Monitoring Well ("MW") SAMPLE ID	MW-1s	MW-1is	MW-1i	MW-1D38	MW-2s	MW-2i	MW-2D38	MW-3s	MW-3i	MW-3D37	MW-4s	MW-4i	MW-4D38	MW-5s	MW-5i	MW-5D37	MW-6s	MW-6i	MW-6D40	MW-7s	MW-7i	MW-7D41	MW-8s	MW-8i	MW-8D42	MW-9s	MW-9i	MW-9D43
SAMPLE DATE	11/3/11	12/5/11	11/3/2011		11/3/2011			11/2/2011			11/4/2011			11/2/2011			11/7/2011			11/9/2011			11/8/2011			11/8/2011		
LOCATION	3507 Cooper Dr.				3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			3507 Cooper Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.			2503 Marina Dr.		
DEPTH (feet)	3-13	13.5-18.5	22-27	33-38	3-13	23.5-28.5	33-38	3-13	22-27	32-37	3-13	23-28	33-38	3-13	23-28	32-37	3-13	22-27	35-40	3-13	24-29	36-41	3-13	22-27	37-42	3-13	29-34	38-43
Trichloroethylene (TCE)	ND	**16**	ND	ND	ND	**10** (12)	ND	ND	**14**	ND	ND	ND	ND	ND	**19**	ND	ND	**17**	ND	ND	**40** (41)	ND	ND	**73**	ND	ND	**8.4**	ND
Tetrachloroethylene (PERC)	ND	**23**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Monitoring Well ("MW") SAMPLE ID	MW-10s	MW-10is	MW-10iu	MW-10i	MW-10D39	MW-11ss	MW-11is	MW-11s	MW-11iu	MW-11i	MW-11D44	MW-12ss	MW-12s	MW-12i	MW-12D40	MW-13s	MW-13i	MW-13D37	MW-14ss	MW-14is	MW-14iu	MW-14i	MW-15ss	MW-15is	MW-15iu	MW-15i
SAMPLE DATE	11/9/2011	9/5/2012		11/9/2011		12/1/2011	10/17/2012	11/9/2011	10/17/2012	11/9/2011		12/1/2011	11/10/2011			11/11/2011			9/6/2012				9/5/2012			
LOCATION	2503 Marina Dr.					2503 Marina Dr.						3504 Henke St.				North of Cooper Dr.			2503 Marina Dr.				2503 Marina Dr.			
DEPTH (feet)	3-13	13-15.5	15.2-20.2	25-30	34-39	2.75-7.75	7.9-10.4	3-13	11.4-13.9	24-29	39-44	2.0-7.0	3-13	21-26	35-40	3.5-13.5	22.5-27.5	32-37	4-9	12.8-15.3	15-20	21-26	5-10	13.75-16.25	16.25-21.25	22-27
Trichloroethylene (TCE)	ND	ND	**87**	**100**	ND	ND	**2.5**	**100**	**230**	**180**	**17**	ND	**41**	**410**	**12**	**34**	ND	ND	ND	**190**	**180**	**250**	ND	ND	**92** (89)	**190**
Tetrachloroethylene (PERC)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**59**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane (1,1,1-TCA)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11**

NOTES:

See laboratory reports for complete analytical results.

All results in micrograms per liter (ug/l).

Only VOC (volatile organic compound) constituents shown with detections (acetone detected in VAS sample GW-3 (13) at a concentration of 22 ug/l).

ND = Not Detected at or above laboratory reporting limit (typically 5.0 ug/l for constituents listed for results prior to April 30, 2012 - TCE & PERC changed to 2.0 ug/l by lab on April 30, 2012).

IDEM RISC = Indiana Department of Environmental Management's Risk Integrated System of Closure.

Bold = Concentration of analyte or parameter greater than or equal to the laboratory reporting limit.

Bold & Yellow highlighted results indicate concentration exceeds the IDEM RISC residential default closure level (RDCL) = 5.0 ug/l for TCE & PERC and 200 ug/l for 1,1,1-TCA.

Bold, Underlined, & Magenta highlighted results indicate concentration exceeds the IDEM RISC industrial default closure level (IDCL) = 31 ug/l for TCE, 55 ug/l for PERC, and 29,000 ug/l for 1,1,1-TCA.

Results in (xx) indicate field duplicate ("FD") results.

ATTACHMENT D

Maps & Aerial Photographs

SOIL & GROUND WATER SAMPLES IN VICINITY THROUGH OCT. 2012

N

0 80 ft

Legend

IDEM 2008 Sampling
- VAS Location
- Soil Sample Location

Roberts March 2011 Sampling
- VAS Location

Roberts Oct./Nov. 2011 Sampling
- VAS Location
- Monitoring Well Cluster

Roberts 2012 Samples
- Soil Sample Location
- VAS Location
- Monitoring Well Cluster

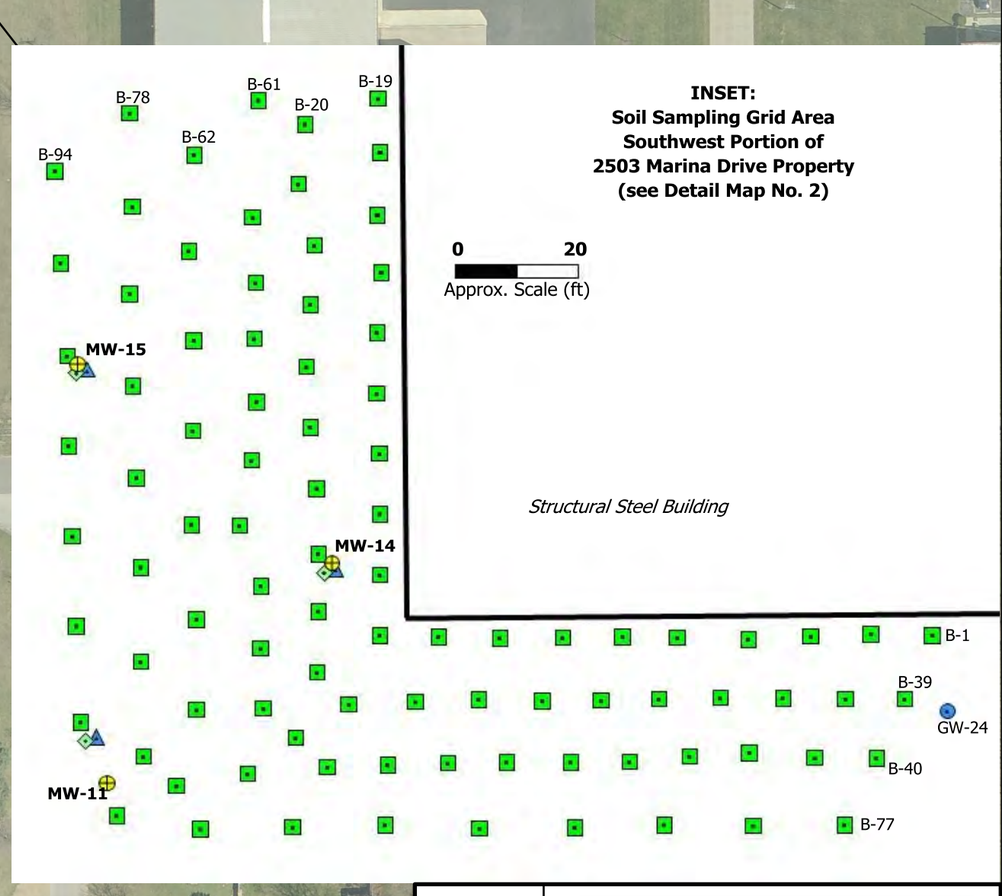
NOTES:

IDEM 2008 and Roberts 2011/2012 Vertical Aquifer Screening ("VAS") and soil samples shown.
Roberts 2011/2012 permanent monitoring wells also shown.
IDEM private water well samples are not depicted.
Only samples located within map area shown.

Roberts Soil & Ground Water Sampling Included:
61 ground water samples collected in March 2011.
115 ground water samples collected in Oct./Nov. 2011, which includes 42 permanent monitoring wells.
298 soil & 6 ground water samples collected in July 2012.
10 ground water samples collected via 10 additional permanent monitoring wells in Sept. 2012 and 2 ground water samples collected via 2 more monitoring wells installed in October 2012. Total of 298 soil samples and 194 ground water samples, which includes 54 permanent monitoring wells.

TCE = Trichloroethylene
Approximate TCE in ground water boundaries based on all detections greater than 5.0 ug/l using IDEM & Roberts ground water sample locations.

2601/53217
GW-19 GW-18 GW-17 GW-16 GW-15 GW-14 GW-13 GW-12 GW-11 GW-10 GW-9 GW-8 GW-7 MW-13 GW-6 GW-5 GW-4 GW-3 GW-2 GW-1
Cooper Dr.
GW-9 GW-10 MW-1 GW-12 GW-11 GW-17
3505 23520
3507 23542
MW-2 GW-13 MW-4 GW-8 MW-3 GW-2 GW-1
2505/53293
Marina Dr.
GW-15 MW-5 GW-14 E2Q73 (4ft) GW-7 GW-6 GW-5 GW-4 GW-3
E2Q92 E2Q93 E2Q72 E2PP8
E2Q53 (6ft)
E2PT6 E2PT7 E2PT8 E2PP8
MW-8 MW-7 MW-6 E2Q47 (6ft)
E2Q60 E2Q62 E2Q61 E2PP8
E2PP9 E2PQ1 E2Q99 E2PP8
GW-23
E2Q03 (7ft) E2Q04 E2Q05 E2Q06 E2PP8
GW-18
GW-19
B-99 B-98 B-97 B-96 B-95
LOADING DOCK SOIL SAMPLES (see Detail Map #1)
E2Q63 E2Q64 E2Q65 E2PP8
E2Q48 (8ft)
MW-9 GW-16
GW-22 GW-21 GW-20
MW-10
E2PZ9 E2PZ8 E2PZ7 E2PP8
SOIL SAMPLING GRID
94 LOCATIONS
3 DIFFERENT DEPTHS EACH
282 SOIL SAMPLES TOTAL
(see Detail Map #2)
2503/53381
E2Q49 (9ft) MW-15
E2Q01 E2Q95 E2PP2 E2PP8
E2Q50 (8ft) E2Q51 (8ft)
E2Q83 E2Q84 E2Q85 E2PP8
E2PY2 E2PY1 E2PY0 E2PP8
3504 23575
E2Q52 (6ft) MW-14 GW-25
MW-11 GW-24
E2Q42 E2Q46 E2Q41 E2PP8
E2Q32 E2PY5 E2PY6 E2PP8
E2PZ6 E2PZ4 E2PZ5 E2PP8 E2Q91 (8ft)
E2Q86 E2Q87 E2Q88 E2PP8 E2Q90
MW-12
3506 23537
E2PX8 E2PX7 E2PX6 E2PP8
E2Q23 E2Q24 E2Q26 E2PP8
E2Q28 E2Q29 E2Q30 E2PP8
E2Q31 E2PY3 E2Q37 E2PP8
E2PX5 E2PX4 E2PX3 E2PP8
E2Q10 E2Q11 E2Q12 E2PP8
Henke St./County Road 106
Lane St.
E2Q07 E2Q08 E2Q09 E2PP8
Timothy Ct.



INSET:
Soil Sampling Grid Area
Southwest Portion of
2503 Marina Drive Property
(see Detail Map No. 2)

Oct. 2012 Locations (ddj)

ROBERTS ENVIRONMENTAL SERVICES, LLC

1986 AERIAL PHOTOGRAPHY

(Elkhart County Planning Department)

N

0 100 ft

Legend

IDEM 2008 Sampling
- VAS Location
- Soil Sample Location

Roberts March 2011 Sampling
- VAS Location

Roberts Oct./Nov. 2011 Sampling
- VAS Location
- Monitoring Well Cluster

Roberts 2012 Samples
- Soil Sample Location
- VAS Location
- Monitoring Well Cluster

GW-18 GW-17 GW-16 GW-15 GW-14 GW-13 GW-12 GW-11 GW-10 GW-9 GW-8 GW-7 GW-6 GW-5 GW-4 GW-3 GW-2 GW-1

MW-13

SECOND DR

Cooper Dr.

Marina Dr.

MARINA

2603/53151

2601/53217

2505/53293

2503/53381

3505
23620

3507
23542

3504
23575

GW-9 GW-10 MW-1 GW-12 GW-11 GW-17

MW-2

GW-13 MW-4 GW-8 MW-3 GW-2 GW-1

GW-15 MW-5 GW-14 E2Q73 (4ft) GW-7 GW-6 GW-5 GW-4 GW-3

E2Q92
E2Q93
E2Q72
E2PP8

E2Q53 (6ft)

MW-8 MW-7 MW-6

E2PT6
E2PT7
E2PT8
E2PP8

E2Q60
E2Q62
E2Q61
E2PP8

E2Q03 (7ft)
E2Q04
E2Q05
E2Q06
E2PP8

GW-23

E2Q47 (6ft)
E2PP9
E2PQ1
E2Q99
E2PP8

GW-18 GW-19

B-99 B-98 B-97 B-96 B-95

E2Q63
E2Q64
E2Q65
E2PP8

E2Q48 (8ft)

MW-9 GW-22 GW-21 GW-20 GW-16

MW-10

E2PZ9
E2PZ8
E2PZ7
E2PP8

E2Q49 (9ft) MW-15

E2Q01
E2Q95
E2PP2
E2PP8

E2Q50 (8ft)
E2Q51 (8ft)

MW-14

E2Q52 (6ft) MW-11 GW-25 GW-24

E2Q42
E2Q46
E2Q41
E2PP8

E2Q83
E2Q84
E2Q85
E2PP8

E2Q32
E2PY5
E2PY6
E2PP8

E2PZ6
E2PZ4
E2PZ5
E2PP8

E2Q91 (8ft)

E2Q86
E2Q87
E2Q88
E2PP8
E2Q90

MW-12

TCE IMPACTS WITH SOIL & GROUND WATER SAMPLES IN VICINITY THROUGH OCT. 2012

Oct 2012 Locations (ddj)

ROBERTS ENVIRONMENTAL SERVICES, LLC


A-11
A-14
694
-012
-013
-014
394.09
2-26C
-023
401.71
182
SECOND DR.
60
2601 Marina Drive
1993 AERIAL PHOTOGRAPHY
(Elkhart County Surveyor's Office)
-021
-019
-013
-024
2.31
3507 Cooper Drive
-008
2.66
400
400
-002
2.98

ATTACHMENT E

ECHD & IDEM Records
2601 Marina Drive Property

Elkhart Co IA

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

February 14, 2002

Mr. Craig Gordon
Human Resources Manager
R.E. Jackson Co., Inc.
53217 Marina Dr.
Elkhart, IN 46514

Dear Mr. Gordon:

Re: U.S. EPA ID Number: IND065854887
Location: Jackson R.E. Co., Inc.
53217 Marina Dr.
Elkhart, IN 46514

In response to your Hazardous Waste Handler Identification form dated February 5, 2002, the following information has been updated regarding the above-mentioned facility:

- **Hazardous Waste Generator Status: Conditionally Exempt Small Quantity**

Enclosed is a new ID form that reflects the above change. If anything on the form is incorrect, please indicate the changes and return the form to me. If everything is correct, you may keep the ID form for submitting changes in the future.

If you have any questions or need further assistance, please contact me at 317-232-7956.

Sincerely,

Marilyn J. Hansen, Environmental Manager
Facility Data Analysis Section
Office of Land Quality

Enclosure

ID FORM

OFFICE OF LAND QUALITY
HAZARDOUS WASTE HANDLER IDENTIFICATION

	INFORMATION ON FILE as of 10/26/2001	CHANGES NEEDED (please print)
COUNTY	ELKHART	Reason for submittal ✓ Subsequent notification to update information ✓ As a component of the annual or biennial report ___ As a component of the annual operation fees
RCRA ID	IND065854887	
NAME	JACKSON RE CO INC	
LOCATION ADDRESS	53217 MARINA DR ELKHART IN 46514	___we moved * ___post office change
MAILING ADDRESS	53217 MARINA DR ELKHART IN 46514	
CONTACT Title Address Phone Fax E-mail	GORDON CRAIG HR MGR 53217 MARINA DR ELKHART IN 46514 219-264-7557 Ext	574-264-7557 ext. 203 fax @ 574-264-7316
OWNER Address phone fax e-mail	R E JACKSON CO INC 53217 MARINA DR ELKHART IN 46514 219-264-7557 Ext	574-264-7557 Fax # 574-264-7316 Did the owner change? ___Yes ✓No Date changed: ___/___/___
Land type Owner type	P P (See instructions for codes)	* WARNING If you have moved you may no longer use your old RCRA ID number. IDEM will issue a number for your new location.

Contact for questions on the Annual/Biennial report Last Name Gordon First Name Craig Title Human Resources Mgr. Phone # 574-264-7557

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties under Section 3008 of the Resource Conservation and Recovery Act for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Last Name Shelly First name Terry Title President

Signature Terry K Shelly Date 2/5/02

IND065854887 JACKSON RE CO INC

HAZARDOUS WASTE ACTIVITY	OLQ records	Current status	Previous (report) year status *When ID form is sent with fees or report*
GENERATOR *LQG = large quantity* *SQG = small quantity* *CESQG = conditionally exempt*	SQG	____*LQG* ____*SQG* X *CEG* ____ *Non-handler ** ____*Out of Business**	____*LQG* ____*SQG* X *CEG* ____*Non-handler** ____*Out of Business**
TREATMENT, STORAGE, DISPOSAL FACILITY		____ *Active TSD* ____ *Inactive TSD* ____ *Completed RCRA closure* ____ *Post closure activities*	____ *Active TSD* ____ *Inactive TSD* ____ *Completed RCRA closure* ____ *Post closure activities*
TRANSPORTER *S = we transport our own waste* *C = we transport waste for others* *X = transporter, status unknown*		____*We transport our own waste (S)* ____ *We transport for others (C)* ____*No longer transport; still in business* ____*Out of business*	** If you have checked out of business or non-handler, we will deactivate your RCRA ID number.* *You must re-notify IDEM before you may reuse the number.*
EXEMPT BOILER and/or INDUSTRIAL FURNACE smelting,melting,refining exemption small quantity on site burner exemption	____ ____	____ smelting,melting,refining exemption ____ small quantity on site exemption	

USED OIL

____ Transporter	____ Processor	____ Marketer who directs shipment to off-specification burner
____ Transfer Facility	____ Re-refiner	____ Marketer who first claims the oil meets specifications
____ Collection Ctr	____ Recyler	____ Off-specification Used Oil Burner

UNIVERSAL WASTE

____

L = large handler
S = small handler

TRANSFER FACILITY

____ Mix	____ Combine	____ Pump	____ Open containers
____ Bulk	____ Comingle	____ Repackage	____ Transfer between vehicles

(See instructions for NAICS and HW codes)

NAICS CODES ____ ____ ____ ____
(primary)

HW CODES ____ ____ ____ ____ ____ ____ ____

COMMENTS ____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

HAZARDOUS WASTE HANDLER INFORMATION UPDATE FORM

EPA ID: IND065854887
NAME: JACKSON RE CO INC

Change _____

Is the name change due to a change in ownership ___ yes ___ no

LOCATION ADDRESS: 53217 MARINA DR
ELKHART IN 46514

Change _____

___ We moved ___ PO change ___ Other (please explain)

MAILING ADDRESS: 53217 MARINA DR
ELKHART IN 46514

Change _____

CONTACT: FRITZ, ROBERT MAINT SUPV
53217 MARINA DR
ELKHART IN 46514

Change Craig Gordon H.R.MGR.

OWNER: R E JACKSON CO INC
53217 MARINA DR
ELKHART IN 46514

Change _____

COUNTY: ELKHART

*** HAZARDOUS WASTE ACTIVITY ***

	DEM	1997	Future
GENERATOR TYPE (LQG, SQG, or CEG)	SQG	SQG	
TRANSPORTER TYPE S = we transport our own waste C = we transport waste commercially			
TSD TYPE (includes inactive TSDs who have not completed RCRA closure)			
POST CLOSURE ACTIVITY			
*NON HANDLER			
*OUT OF BUSINESS			
*ONE TIME GENERATOR			

*If you have checked one of these categories, your EPA ID number will be deactivated and you will have to reapply for it if you ever need to manifest waste off site again.

SIC CODES: 3334 3353 3354
Change 3429 ___ ___ ___

COMMENTS: _____

SIGNATURE: Craig Gordon

DATE: 7/8/97

HWIMS

RD 12/31/90

1A Elkhart

RE JACKSON CO INC
53217 MARINA DR
ELKHART
SQG
IND065854887

STATE OF INDIANA
BIENNIAL REPORT 1989

FORM I: INSTALLATION IDENTIFICATION FORM

WHO MUST COMPLETE FORM I? Every site that receives this package.

INSTRUCTIONS: Please refer to the specific instructions before completing all forms. The information requested herein is required by IC 13-7-8.5-2.

I. **INSTALLATION'S EPA I.D. NUMBER** IND065854887

II. **NAME OF INSTALLATION** R E JACKSON CO INC

III. **INSTALLATION MAILING ADDRESS**

Street Or P.O. Box 53217 MARINA DR

City Or Town ELKHART

State IN Zip Code 46514

IV. **LOCATION OF INSTALLATION**

Street Or P.O. Box 53217 MARINA DR

City Or Town ELKHART

State IN Zip Code 46514 County ELKHART 039

V. **HAZARDOUS WASTE ACTIVITY**

Mark the boxes that reflect the activities at your facility in 1989.

- ☐ Large Quantity Generator (G)
  generated 1,000 or more kg/month of RCRA hazardous waste
- ☐ Small Quantity Generator (SQG)
  generated between 100-1,000 kg/month of RCRA hazardous waste
- ☑ Conditionally Exempt Generator (CEG)
  generated less than 100 kg/month of RCRA hazardous waste
- ☐ Transporter (T)
  transported RCRA hazardous waste
- ☐ Treatment, Storage or Disposal Facility (TSD)
  operated under interim status or a final RCRA permit
- ☐ Non handler
  Did not handle RCRA hazardous waste because:
  - ___ We never generated
  - ___ We are out of business
  - ___ Only excluded or delisted waste
  - ✓ Occasional generator (but none in 1989)
  - ___ Other (Specify in Comments)
- ☐ RCRA Exempt
  treatment, recycling or disposal was conducted in RCRA exempt units

Check to see if items II, IV, & V are identical to the information in the label on Form I. If not, please indicate why in the boxes below.

VI. STATUS CHANGES

- ☐ a. We have moved.
- ☐ b. We have changed ownership.
- ☐ c. We have changed hazardous waste activity.

** If any of the above three boxes are marked, you will need to fill out the EPA Notification of Hazardous Waste Activity Form, and return it with this packet.

- ☐ d. We have gone out-of-business.
- ☐ e. We no longer handle hazardous waste.

** If you check either of these boxes, we will deactivate your EPA ID number and you may no longer use it without renotifying U.S. EPA, Region V.

- ☐ f. We have changed our name (but not ownership).

VII. STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE (See Table I)

(1) 3334 (2) 3353 (3) 3354 (4) ____

VIII. INSTALLATION CONTACT

Last Name	First Name	Phone (area code & no.)
FRITZ	ROBERT (BOB)	219 / 261 - 7557

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ROBERT DEE FRITZ — Robert Dee Fritz — 12-3-90

(A.) PRINT OR TYPE NAME AND TITLE (B.) SIGNATURE (C.) DATE SIGNED

Please print or type with ELITE type (12 characters per inch).

FCW.11-6-87

IA
Elkhart

CHANGE OF STATUS FORM

COMPANY NAME Jackson Company EPA ID IND040265563

Please change on DP file name: :

☐ Name ☐ Address ☐ ID Number ☐ Activity

☐ Status ☐ Contact ☐ Phone ☐ Other

(Please check any appropriate boxes. Then cite the new data on the lines below.)

Your Name: Jenny Ranck Dooley 10/22/87

Data to be changed:

NOTIFIER NAME :

MAILING ADDRESS: 53217 Marina Dr.

MAILING CITY, STATE, ZIP CODE: Elkhart, IN 46514

NOTIFIER CONTACT:

LOCATION ADDRESS: 53217 Marina Dr.

LOCATION CITY, STATE, ZIP CODE: Elkhart, IN 46514

PHONE: 219-264-7557

ACTIVITY:

STATUS: 6 [Non-handler]

COUNTY:

File in Company file (see above).

Division of Land Pollution 12/82

Office of Solid & Hazardous Waste Ma[illegible]nent
INDIANA DEPARTMENT OF ENVIRONMENTA[illegible]MANAGEMENT
105 South Meridian Street
P.O. Box 6015
Indianapolis, IN 46206-6015

ST

ENVIRONMENTAL COORDINATOR 66-01
IND040[illegible]
JACKSON COMPANY INC P E
53217 MARINA DR
ELKHART IN 46514

FORM E:

MAR 1 8 56 AM '88
OFFICE OF SOLID AND HAZARDOUS WASTE MGMT DEM

Installation Ic

SOLID WASTE MANAGEMENT BOARD

INSTRUCTIONS: Please refer to the specific instructions before completing this form. The information requested herein is required by IC 13-7-8.5--2.

I. TYPE OF HAZARDOUS WASTE REPORT FOR THE YEAR ENDING DEC. 31, 19 87

FORM G:
GENERATOR BIENNIAL REPORT [✓]

FORM F:
FACILITY BIENNIAL REPORT [ ]

DID NOT GENERATE/TSD HAZARDOUS [ ]

SMALL QUANTITY GENERATOR OF HAZARDOUS WASTE
GENERATE LESS THAN 100 Kg PER MONTH [ ]
GENERATE BETWEEN 100 & 1000 Kg PER MONTH [✓]

II. INSTALLATION'S EPA I.D. NUMBER IND065854817

III. NAME OF INSTALLATION JACKSON C/O INC

IV. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX 53217 MARINA DR

CITY OR TOWN ELKHART

STATE IN ZIP CODE 46514

V. LOCATION OF INSTALLATION

STREET OR P.O. BOX SAME AS ABOVE

CITY OR TOWN

STATE ZIP CODE COUNTY ELKHART CO.

VI. INSTALLATION CONTACT

Last Name	First Name	Phone (area code & no.)
FRITZ	ROBERT	219/264-7557

VII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ROBERT D. FRITZ HEALTH & SAFETY DIR. (A.) PRINT OR TYPE NAME AND TITLE

Robert D. Fritz (B.) SIGNATURE

2-26-88 (C.) DATE SIGNED

Please print or type with ELITE type (12 characters per inch).

State Form 19288R
Revised 10/87

Please print or type with ELITE type (12 charact.) in the unshaded areas only.

Form Approved OMB No. 158-S79016
SA No. 0246-EPA-OT

G1

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.: IND040265563

5/15

I. NAME OF INSTALLATION: JACKSON R E COMPANY INC

II. INSTALLATION MAILING ADDRESS: ~~55092 PHILLPS ST~~ 53217 Marina Dr.
ELKHART, IN 46514

001456 AUG 19 80

III. LOCATION OF INSTALLATION: 55092 PHILLPS ST
ELKHART, IN 46514

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

FOR OFFICIAL USE ONLY

COMMENTS:

INSTALLATION'S EPA I.D. NUMBER: F

APPROVED:

DATE RECEIVED (yr., mo., & day): 80 08 19

I. NAME OF INSTALLATION

R. E. Jackson Company Inc.

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 53217 MARINA Dr.

CITY OR TOWN: Elkhart

ST.: IN

ZIP CODE: 46514

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 55092 Phillips St

CITY OR TOWN: Elkhart E

ST.: IN

ZIP CODE: 46514

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title): Shelly Terry K Secretary

PHONE NO. (area code & no.): 219-264-7557

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: R. E. Jackson Company Inc.

B. TYPE OF OWNERSHIP (enter the appropriate letter into box): M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [ ] A. GENERATION
- [ ] B. TRANSPORTATION (complete item VII)
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only - enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify):

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.:

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

AUG 19 1980

EPA Form 8700-12 (6-80)

CONTINUE ON REVERSE

FOR OFFICIAL USE ONLY

W	I	N	D	0	4	0	2	6	5	5	6	3	2	1

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F001	F005	F017			
7	**8**	**9**	**10**	**11**	**12**

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
U158	U226				
37	**38**	**39**	**40**	**41**	**42**
43	**44**	**45**	**46**	**47**	**48**

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
Terry K Shelly	Terry K Shelly, Secretary	8/18/80

EPA Form 8700-12 (6-80) REVERSE

REFERENCE: 79

ECHD. Fax from John Hulewicz regarding inspection information for R.E. Jackson

December 8, 2008. 32 pages

4230 Elkhart Road
Goshen, IN 46526
PHONE: (574) 875-3391
FAX: (574) 875-3376

Environmental Health Services Division, Elkhart County Health Department

Fax

To: Mark Jaworski From: John "Big Daddy" Ahlemeier

Fax: 317-234-0428 Pages: ____ including this cover sheet

Phone: Date: 12-8-08

Re: CC:

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments: RE Jackson + Stiles both had complaints of dumping in the MSD 80's. Max Michaels may have some background info as well. RE Jackson + Stiles are no longer operating businesses.

Ref. 17

Reference: 79

Unit A

ELKHART COUNTY GROUND WATER PROTECTION PROGRAM
REGISTRATION AND INSPECTION FORM

Facility Name BE Jackson Co Inc.		Facility I.D. Number 9248	Date 2/11/08
Address 53217 Marina Dr		Contact Name Craig Gordon	
City Elkhart	Zip 46514	Township 02	Phone Number 264-7557	NAICS 33232

Purpose: (check all that apply)

Routine	☒	Registration	☐
Reinspection	☐	Spill	☐
Complaint	☐	Other	☐

Additional Information: (check all that apply)

Hazardous Waste Inspected: SQG ☐ LQG ☐ TSD ☐ Unknown ☐

SARA Title III:
- Emergency Planning (EHS) ☐
- Toxic Chemical Release Reporting ☐
- Community Right-To-Know Requirements ☐
- Unknown ☐

Registration Exemption: (check all that apply)

- No on-site wastewater disposal system ☐
- Store < 100 kg/mo. of hazardous/toxic substances ☐
- Resale of unopened products ☐
- Laboratory ☐

The items marked below identify violations of the Elkhart County Ground Water Protection Ordinance 99-250. All violations should be corrected as soon as possible, but no later than the compliance time indicated under each violation. Failure to comply may result in the assessment of fines. Prior to the indicated compliance time written requests for the extension of compliance times or appeals regarding this inspection may be directed to the Elkhart County Health Department, 4230 Elkhart Road, Goshen, IN, 46526, (219) 875-9391.

Registration

11 Registered on-site wastewater disposal systems (5.A.) **(Immediate compliance)**

System 1: Type Septic Flow _____
Location Front of Bldg

System 2: Type Septic Flow _____
Location Back of Bldg

System 3: Type _____ Flow _____
Location _____

System 4: Type _____ Flow _____
Location _____

System 5: Type _____ Flow _____
Location _____

System 6: Type _____ Flow _____
Location _____

12 Registered hazardous/toxic materials storage area (5.B.) **(Immediate compliance)**

13 Notified ECHD of changes to on-site wastewater disposal system or hazardous/toxic substances storage area (RR 2.C., RR 2.D.) **(Immediate compliance)**

On-site Wastewater Disposal System

14 Furnished a wastewater characterization for each on-site wastewater disposal system (6.) **(30 days to comply)**

Inspections

15 Upon notice of a violation, correct the violation as requested (12.B.) **(Immediate compliance)**

16 Provided requested information to determine compliance with ordinance (13.C.) **(Immediate compliance)**

Indoor Storage of Hazardous/Toxic Substances

17 Toxic/hazardous substances located in a manner to prevent a spill onto the ground (RR 4.B.) **(7 days to comply)**

18 Toxic/hazardous substances located in a manner to prevent a spill into a drain that is connected to an on-site wastewater disposal system (RR 4.B.) **(7 days to comply)**

Outside Storage of Hazardous/Toxic Substances

19 Storage on an impervious underlying base (RR 4.A.) **(7 days to comply)**

20 Storage in a containment system with adequate capacity (RR 4.A.) **(14 days to comply)**

21 Proper maintenance of containment system to protect integrity and capacity (RR 4.A.) **(14 days to comply)**

22 Proper removal or disposal of spilled material and accumulated precipitation (RR 4.A.) **(7 days to comply)**

23 Storage in product-tight containers (RR 4.C.) **(7 days to comply)**

24 Controlled drainage of precipitation in the containment system (RR 4.D.) **(7 days to comply)**

25 Storage in secondary containment (RR 4.A.) **(14 days to comply)**

Temporary Storage Areas

26 Storage on an impervious underlying base (RR 4.H.) **(7 days to comply)**

27 Storage does not exceed two (2) business days (RR 4.H.) **(2 days to comply)**

28 Spill response plan (RR 4.H.) **(7 days to comply)**

Spills

29 Spill of a toxic or hazardous substance (4.) **(Immediate compliance)**

30 Discharge of process wastewater into or above an aquifer (4.) **(Immediate compliance)**

31 Reportable spill due to quantity requirements (10.A. and 10.C.) **(Immediate compliance)**

32 Reportable spill damaging waters of the state (10.A. and 10.C.) **(Immediate compliance)**

33 Reportable spill due to no spill response (10.A.) **(Immediate compliance)**

34 Undertake spill response activities (10.C.) **(7 days to comply)**

Follow-up Action: Reinspection on or about ___/___/___

Routine (Priority Category) 1 (2) 3 0

Received by: Craig Gordon

Inspected by: Christie J Stellar

*Compliance with the Elkhart County Ground Water Protection Ordinance does not exempt this facility from any other federal, state or local laws, codes or regulations.

1/00 White – ECHD 1 Yellow – Facility Pink – ECHD 2

ELKHARTY COUNTY GROUND WATER PROTECTION PROGRAM
TOXIC OR HAZARDOUS SUBSTANCE STORAGE AREAS
REGISTRATION INFORMATION

FACILITY NAME RE Jackson Co. Inc FACILITY ID NUMBER [illegible] 2248

Hazardous Substance	Type of Container: D	B	C	A	T	U	O	Maximum Amount Stored In Any Month			Storage Location: Inside	Outside	Date: Added	Deleted
Tooltex	X							275	gals (circled)	lbs	X		2/11/00	
MEK			X					16	gals (circled)	lbs	X		2/11/00	
Window Cleaner	X							110	gals (circled)	lbs	X		2/11/00	
Scotch-Seal			X					10	gals (circled)	lbs	X		2/11/00	
Xylene			X					5	gals (circled)	lbs	X		2/11/00	
Isopropyl Alcohol			X					5	gals (circled)	lbs	X		2/11/00	
Naphtha			X					5	gals (circled)	lbs	X		2/11/00	
Buckeye Degreaser	X							55	gals (circled)	lbs	X		2/11/00	
Hydraulic Oil		X						10	gals (circled)	lbs	X		2/11/00	
Waste oil		X						5	gals (circled)	lbs	X		2/11/00	
Paints			X					10	gals (circled)	lbs	X		2/11/00	
Degreasing Tank				X				100	gals (circled)	lbs	X		2/11/00	
									gals	lbs				
									gals	lbs				
									gals	lbs				
									gals	lbs				
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									gals	lbs				
									gals	lbs				

Container type: D – drum, B – bucket, C – can, A – above ground storage tank, T – tote, U – underground storage tank, O – other

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
INSPECTION FORM

ID NUMBER 2248 DATE 1/5/99 PAGE 1 OF 2

BUSINESS NAME Re Jackson Co Inc

ADDRESS 53217 Marina Dr Elkhart ZIP 46514

PHONE NUMBER 264-7557 CONTACT NAME Craig Gordon

CHECK ALL APPLICABLE:

[X] SEPTIC [ ] DRYWELL [ ] CITY SEWER [ ] OTHER

[X] FLOOR DRAINS Underneath water test booth for windows

[X] STORAGE OF HAZARDOUS OR TOXIC SUBSTANCES (SEE INVENTORY)

[X] WASTE WATER CHARACTERIZATION PROVIDED / NEXT DUE 2/2000

EXEMPTIONS: [ ] REGISTRATION [ ] W.W.C. CLASS 1 NEXT INSPECTION 1/2000

CODE	INV.#	VIOLATION	COMPLIANCE TIME/DATE COMPLETED	
		No violations		
	*	Note - adhesive should be in secondary containment or inside when in a liquid phase		
	2	-since it was solid due to cold weather- OK		

Christine J Wells
ENVIRONMENTALIST

Craig Gordon
FACILITY CONTACT PERSON

REINSPECTION DATE _____ INITIALS _____

*COMPLIANCE WITH THE ELKHART COUNTY GROUND WATER PROTECTION ORDINANCE DOES NOT EXEMPT THIS FACILITY FROM ANY OTHER FEDERAL, STATE OR LOCAL LAWS, CODES OR REGULATIONS.

1/92 AVT 4/96 12/94 REV/REW ECHO COPY

0004

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
HAZARDOUS/TOXIC SUBSTANCE INVENTORY

PAGE 2 OF 2

COMPANY NAME Re Jackson Co, Inc Date 1/5/99

	SUBSTANCE	LOCATION	AMT	CPCTY	CONTAINER	COMPLY
1.	~~Mixture~~ Wast Tooltex	Inside - Stock room	1	55gal	drum	Y
2.	Scotch-Grip-Adhesive	outside	1	5gal	metal	Y
3.	Mek - Waste	Outside - in metal box	1	5gal	metal	Y
4.	Glass Cleaner	Inside - near clean room	2	30gal	plastic	Y
5.	Scotch Seal-Metal Sealant	" - near clean room	2	5gal	metal	Y
6.	Naphtha	" - near clean room	4	5gal	metal	Y
7.	Isopropanol	" - near clean room	2	5gal	metal	Y
8.	Scotch-grip-adhesive	" - near clean room	1	5gal	metal	Y
9.	Xylene	" - near clean room	1	5gal	metal	Y
10.	Tooltex	" - Degreasing Area	1	55gl	drum	Y
11.	Degreaser	" - Degreasing Area	1	55gal	plastic	Y
12.	Degreasing Tank	" - Degreasing Are	2	~50gal	AST	Y
13.	Hydraulic oil	" - Maintenance	2	5gal	plastic	Y
14.	Waste oil	" - Maintenance	1	5gal	plastic	Y
15.	Various Paints	" - Maintenance	15	1gal	metal	Y
16.	Hydraulic oil	"	1	55gal	drum	Y
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						
26.						

7/92 REV/KSK
4/94 REV/REW

FACILITY COPY

0005

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
HAZARDOUS/TOXIC SUBSTANCE INVENTORY

PAGE 2 OF 2

COMPANY NAME RE Jackson Date 3-4-97

	SUBSTANCE	LOCATION	AMT	CPCTY	CONTAINER	COMPLY
1.	Water Soluble Degreaser	Inside - Degreasing Area	1	55 gal	drum	Y
2.	Cooling Oil - Tooltex	" "	1	55 gal	drum	Y
3.	Degreasing tanks	" "	2	~50 gal	AST	Y
4.	Hydraulic oils	Inside - Maint.	5	5 gal	other	Y
5.	Various paints	" "	15	1 gal	other	Y
6.	Waste Tooltex	Outside - north	1	55 gal	drum	N
7.	Waste MEK	" "	1	55 gal	drum	Y
8.	Unknown waste	" "	3	55 gal	drums	N
9.	Glass Cleaner	Inside - Near Clean Rm	1	50 gal	drum	Y
10.	Adhesive	" "	2	5 gal	other	Y
11.	Isopropanol	Inside, " Cabinet	1	5 gal	other	Y
12.	Naphtha	" "	1	5 gal	other	Y
13.	MEK	" "	1	5 gal	other	Y
14.	Adhesive	" "	2	5 gal	other	Y
15.						
16.						
17.						
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25.						
26.						

7/92 REV/KSK
4/94 REV/REW

FACILITY COPY

0006

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
INSPECTION FORM

2-6-95

ID NUMBER GW-2246 DATE 11-1-94 PAGE 1 OF 2

BUSINESS NAME RE Jackson

ADDRESS 53217 Marina Dr. Elkhart, IN ZIP 46514

PHONE NUMBER 264-7557 CONTACT NAME Sue McCoy

CHECK ALL APPLICABLE:

[✓] SEPTIC [ ] DRYWELL [ ] CITY SEWER [ ] OTHER (2 systems)

[✓] FLOOR DRAINS water test for windows

[✓] STORAGE OF HAZARDOUS OR TOXIC SUBSTANCES (SEE INVENTORY)

[✓] WASTE WATER CHARACTERIZATION PROVIDED / NEXT DUE 2/95 (VOC composite)

EXEMPTIONS: [ ] REGISTRATION [ ] W.W.C. [✓] NONE CLASS I

CODE	INV.#	VIOLATION	COMPLIANCE TIME/DATE	COMPLETED
54	10,11,12	materials stored outside without secondary containment	12-14-94	2-3-95

Geoff Davis
ENVIRONMENTALIST

X Susan McCoy
FACILITY CONTACT PERSON

REINSPECTION DATE _____ INITIALS _____

*COMPLIANCE WITH THE ELKHART COUNTY GROUND WATER PROTECTION ORDINANCE DOES NOT EXEMPT THIS FACILITY FROM ANY OTHER FEDERAL, STATE OR LOCAL LAWS, CODES OR REGULATIONS.

1/92 AVT 4/94 REV/REW ECHD COPY

0007

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
HAZARDOUS/TOXIC SUBSTANCE INVENTORY

PAGE 2 OF 2

COMPANY NAME RE Jackson Date 11-1-94

	SUBSTANCE	LOCATION	AMT	CPCTY	CONTAINER	COMPLY
1.	degreaser	inside - west wall	2	55gal	drum	Y
2.	machine oil	inside - west wall	2	55gal	drum	Y
3.	tapping fluid	" "	1	5gal	other	N
4.	machine oil	inside - east wall	2	55gal	other	Y
5.	sealant	inside - east wall	6	5gal	other	Y
6.	MEK	fire cabinet - south wall	4	5gal	other	Y
7.	Skotch	" "	1	5gal	other	Y
8.	adhesive	" "	2	5gal	other	Y
9.	"prestex" (flammable)	inside - south wall	1	20gal	other	Y
10.	degreaser	outside - north side	1	55gal	drum	N
11.	MEK	" "	2	5gal	other	N
12.	MEK waste	" "	1	55gal	drum	N
13.						
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7/92 REV/KSK
4/94 REV/REW

FACILITY COPY

0008

3-10-97

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
INSPECTION FORM

ID NUMBER GW-2248 DATE 3-4-97 PAGE 1 OF 2

BUSINESS NAME RE Jackson

ADDRESS 53217 Marina Dr. Elkhart ZIP 46514

PHONE NUMBER 264-7557 CONTACT NAME Craig Gordon

CHECK ALL APPLICABLE:

[X] SEPTIC [ ] DRYWELL [ ] CITY SEWER [ ] OTHER

[X] FLOOR DRAINS from water test booth for windows

[X] STORAGE OF HAZARDOUS OR TOXIC SUBSTANCES (SEE INVENTORY)

[X] WASTE WATER CHARACTERIZATION PROVIDED / NEXT DUE 2/2000

EXEMPTIONS: [ ] REGISTRATION [ ] W.W.C. CLASS 1 NEXT INSPECTION 3/1998

CODE	INV.#	VIOLATION	COMPLIANCE TIME/DATE COMPLETED	
54	6,8	Outside storage without secondary containment.	4-4-97	3-12-97 MS

ENVIRONMENTALIST

Craig Gordon
FACILITY CONTACT PERSON

REINSPECTION DATE _____ INITIALS _____

*COMPLIANCE WITH THE ELKHART COUNTY GROUND WATER PROTECTION ORDINANCE DOES NOT EXEMPT THIS FACILITY FROM ANY OTHER FEDERAL, STATE OR LOCAL LAWS, CODES OR REGULATIONS.

1/92 AVT 4/94 12/94 REV/REW ECHO COPY

4-30-93

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
INSPECTION FORM

ID NUMBER 2248 DATE 1-28-93 PAGE 1 OF 2

BUSINESS NAME RE Jackson Co, Inc

ADDRESS 53217 Marina Dr Elkhart, IN ZIP 46514

PHONE NUMBER 264-7557 CONTACT NAME Chris Rizzo

CHECK ALL APPLICABLE:
[✓] SEPTIC [ ] DRYWELL [ ] CITY SEWER [ ] OTHER (2 systems)

[✓] FLOOR DRAINS water test for windows

[✓] STORAGE OF HAZARDOUS OR TOXIC SUBSTANCES (SEE INVENTORY)

[ ] WASTE WATER CHARACTERIZATION PROVIDED / NEXT DUE

EXEMPTIONS: [ ] REGISTRATION [ ] W.W.C. [✓] NONE

CODE	INV.#	VIOLATION	COMPLIANCE TIME	DATE COMPLETED
~~VB82~~	6	storage shed has unsealed floor/ foundation	2-28-93	2-26-93
82	-	no wastewater characterization provided *	4-28-93	4-13-93
* (3) VOC analysis required for:				
		(1) septic system #1		
		(2) septic system #2		
		(3) "water test" discharge		

Geoffrey Osborne
ENVIRONMENTALIST

X Christopher Rizzo
FACILITY CONTACT PERSON

REINSPECTION DATE _____ INITIALS _____

*COMPLIANCE WITH THE ELKHART COUNTY GROUND WATER PROTECTION ORDINANCE DOES NOT EXEMPT THIS FACILITY FROM ANY OTHER FEDERAL, STATE OR LOCAL LAWS, CODES OR REGULATIONS.

1/92 AVT ECHD COPY

0010

ELKHART COUNTY
GROUND WATER PROTECTION ORDINANCE
HAZARDOUS/TOXIC SUBSTANCE INVENTORY

COMPANY NAME RE Jackson

	SUBSTANCE	LOCATION	AMT	CPCTY	CONTAINER	COMPLY
1.	Toolkx Soluble oil	inside-production area	1	55gal		Y
2.	degreaser (CAS #'s: 68 34720, 770354, 20324338, 64972196)	inside-production area	2	55gal		Y
3.						
4.	Napthx	Safety cabinet	1	5gal	steel	Y
5.	MEK	" "	2	5gal	Steel	Y
6.	metal sealant	" "	1	5gal	Steel	Y
7.	adhesive	" "	1	5gal	Steel	Y
8.	waste MEK/Oil	outside-storage shed	1	30gal	steel	N
9.						
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11.						
12.						
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Multi-Page Separator Sheet

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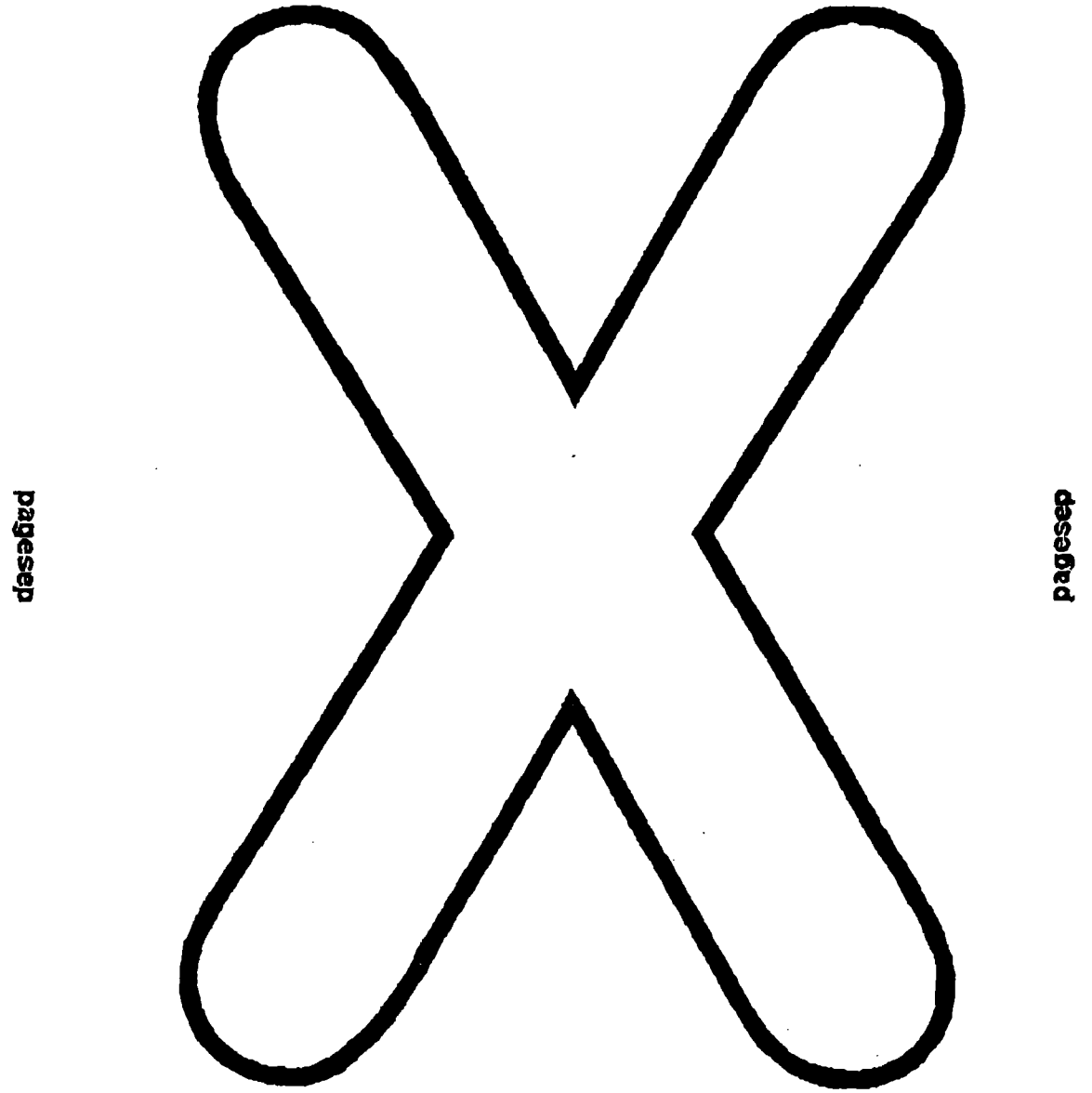

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BOLT Document Management Separator(generic)1.odt

pagesep sheet

Safety & Environmental Resources, Inc.
OSHA/EPA Training & Consulting

1122 DIVISION ST.
P.O. BOX 1308
MISHAWAKA, IN 46546-1308
PHONE: (219) 258-0507
(219) 674-0460
FAX: (219) 258-0370

SER Oil Services
Waste Oil/Water Processing
Specialty Products

DAN WILSON
PRESIDENT

DAN SCHROEDER
GENERAL MANAGER

LABORATORY REPORT

CLIENT: R. E. Jackson
ATTN: Ed Smoker
53217 Marina Drive
Elkhart IN 46514-9586

REPORT: A0321-3

PROJECT/SITE: GWPO Wastewater Characterizations

SAMPLES SUBMITTED: Three liquid sample(s) for individual VOC analysis.

COLLECTED: 3-26-93 BY: RF/CR RECEIVED: 3-31-93

REPORT SUMMARY:

Volatile Organic Compounds (VOCs) are analyzed by a Gas Chromatograph (GC) using the EPA approved method 8021.

A purge and trap system is utilized to separate the VOCs from the sample matrix and introduce the VOCs into the GC. VOC detection is accomplished by an Electrolytic Conductivity Detector (ELCD) and a Photoionization Detector (PID). Purging of known standards are interpreted by the ELCD/PID in order to identify the target compounds.

The detection limits of this method is 1.0 parts per billion (ppb).

Detailed results of the analysis are presented on the following page.

If you have any questions or comments concerning this report, please do not hesitate to call us at (219) 258-0507.

APPROVED BY: John Howard DATE: April 6, 1993

ANALYTICAL RESULTS

CLIENT: R.E. Jackson
ANALYSIS DATE: 4/1/93
SAMPLE DESCRIPTION: Septic 1 (East) A0321 #1

Volatile Organic Compound	DL ug/L	Results	Volatile Organic Compound	DL ug/L	Result
Benzene	1	N.D.	2,2-Dichloropropane	1	N.D.
Bromobenzene	1	N.D.	1,1-Dichloropropene	1	N.D.
Bromochloromethane	1	N.D.	cis-1,3-Dichloropropene	1	N.D.
Bromodichloromethane	1	N.D.	trans-1,3-Dichloropropene	1	N.D.
Bromoform	1.6	N.D.	Ethylbenzene	1	N.D.
Bromomethane	1.1	N.D.	Hexachlorobutadiene	1	N.D.
n-Butylbenzene	1	BDL	Isopropylbenzene	1	BDL
sec-Butylbenzene	1	11.1	p-Isopropyltoluene	1	BDL
tert-Butylbenzene	1	N.D.	Methylene Chloride	1	N.D.
Carbon Tetrachloride	1	N.D.	Naphthalene	1	N.D.
Chlorobenzene	1	N.D.	n-Propylbenzene	1	N.D.
Chloroethane	1	N.D.	Styrene	1	N.D.
Chloroform	1	N.D.	1,1,1,2-Tetrachloroethane	1	N.D.
Chloromethane	1	N.D.	1,1,2,2-Tetrachloroethane	1	N.D.
2-Chlorotoluene	1	N.D.	Tetrachloroethene	1	N.D.
4-Chlorotoluene	1	N.D.	Toluene	1	N.D.
Dibromomethane	1	N.D.	1,2,3-Trichlorobenzene	1	N.D.
1,2-Dibromo-3-Chloropropane	3	N.D.	1,2,4-Trichlorobenzene	1	N.D.
1,2-Dibromoethane	1	N.D.	1,1,1-Trichloroethane	1	N.D.
Dibromomethane	2.2	N.D.	1,1,2-Trichloroethane	1	N.D.
1,2-Dichlorobenzene	1	N.D.	Trichloroethene	1	N.D.
1,3-Dichlorobenzene	1	N.D.	Trichlorofluoromethane	1	N.D.
1,4-Dichlorobenzene	1	BDL	1,2,3-Trichloropropane	1	N.D.
Dichlorodifluoromethane	1	N.D.	1,2,4-Trimethylbenzene	1	1.10
1,1-Dichloroethane	1	N.D.	1,3,5-Trimethylbenzene	1	N.D.
1,2-Dichloroethane	1	N.D.	Vinyl Chloride	1	N.D
1,1-Dichloroethene	1	N.D.	m&p-Xylenes	1	BDL
cis-1,2-Dichoroethene	1	N.D.	o- Xylenes	1	N.D.
trans-1,2-Dichloroethene	1	N.D.			
1,2-Dichloropropane	1	N.D.			
1,3-Dichloropropane	1	N.D.			

Comments:

DL - Detection Limit
N.D. - Not Detected
BDL - Below Detection Limits
ug/L - Parts per Billion
* mg/L - Parts per Millon

ANALYTICAL RESULTS

CLIENT: R.E.Jackson
ANALYSIS DATE: 4/1/93
SAMPLE DESCRIPTION: Septic 2 (Northwest) A0322#2

Volatile Organic Compound	DL ug/L	Results	Volatile Organic Compound	DL ug/L	Result
Benzene	1	N.D.	2,2-Dichloropropane	1	N.D.
Bromobenzene	1	N.D.	1,1-Dichloropropene	1	N.D.
Bromochloromethane	1	N.D.	cis-1,3-Dichloropropene	1	N.D.
Bromodichloromethane	1	N.D.	trans-1,3-Dichloropropene	1	N.D.
Bromoform	1.6	N.D.	Ethylbenzene	1	N.D.
Bromomethane	1.1	N.D.	Hexachlorobutadiene	1	N.D.
n-Butylbenzene	1	N.D.	Isopropylbenzene	1	N.D.
sec-Butylbenzene	1	BDL	p-Isopropyltoluene	1	BDL
tert-Butylbenzene	1	N.D.	Methylene Chloride	1	N.D.
Carbon Tetrachloride	1	N.D.	Naphthalene	1	N.D.
Chlorobenzene	1	N.D.	n-Propylbenzene	1	N.D.
Chloroethane	1	N.D.	Styrene	1	N.D.
Chloroform	1	BDL	1,1,1,2-Tetrachloroethane	1	N.D.
Chloromethane	1	N.D.	1,1,2,2-Tetrachloroethane	1	N.D.
2-Chlorotoluene	1	N.D.	Tetrachloroethene	1	N.D.
4-Chlorotoluene	1	N.D.	Toluene	1	2.45
Dibromomethane	1	N.D.	1,2,3-Trichlorobenzene	1	N.D.
1,2-Dibromo-3-Chloropropane	3	N.D.	1,2,4-Trichlorobenzene	1	N.D.
1,2-Dibromoethane	1	N.D.	1,1,1-Trichloroethane	1	N.D.
Dibromomethane	2.2	N.D.	1,1,2-Trichloroethane	1	N.D.
1,2-Dichlorobenzene	1	N.D.	Trichloroethene	1	N.D.
1,3-Dichlorobenzene	1	N.D.	Trichlorofluoromethane	1	N.D.
1,4-Dichlorobenzene	1	BDL	1,2,3-Trichloropropane	1	N.D.
Dichlorodifluoromethane	1	N.D.	1,2,4-Trimethylbenzene	1	N.D.
1,1-Dichloroethane	1	N.D.	1,3,5-Trimethylbenzene	1	N.D.
1,2-Dichloroethane	1	N.D.	Vinyl Chloride	1	N.D
1,1-Dichloroethene	1	N.D.	m&p-Xylenes	1	N.D.
cis-1,2-Dichoroethene	1	N.D.	o- Xylenes	1	N.D.
trans-1,2-Dichloroethene	1	N.D.			
1,2-Dichloropropane	1	N.D.			
1,3-Dichloropropane	1	N.D.			

Comments:

DL - Detection Limit
N.D. - Not Detected
BDL - Below Detection Limits
ug/L - Parts per Billion
* mg/L - Parts per Millon

ANALYTICAL RESULTS

CLIENT: R.E.Jackson
ANALYSIS DATE: 4/1/93 #3
SAMPLE DESCRIPTION: Plant 2 Water Discharge A0323

Volatile Organic Compound	DL ug/L	Results	Volatile Organic Compound	DL ug/L	Result
Benzene	1	N.D.	1,2-Dichloropropane	1	N.D.
Bromobenzene	1	N.D.	1,1-Dichloropropene	1	N.D.
Bromochloromethane	1	N.D.	cis-1,3-Dichloropropene	1	N.D.
Bromodichloromethane	1	N.D.	trans-1,3-Dichloropropene	1	N.D.
Bromoform	1.6	N.D.	Ethylbenzene	1	N.D.
Bromomethane	1.1	N.D.	Hexachlorobutadiene	1	N.D.
n-Butylbenzene	1	2.34	Isopropylbenzene	1	BDL
sec-Butylbenzene	1	5.57	p-Isopropyltoluene	1	BDL
tert-Butylbenzene	1	4.41	Methylene Chloride	1	N.D.
Carbon Tetrachloride	1	N.D.	Naphthalene	1	BDL
Chlorobenzene	1	N.D.	n-Propylbenzene	1	N.D.
Chloroethane	1	N.D.	Styrene	1	N.D.
Chloroform	1	N.D.	1,1,1,2-Tetrachloroethane	1	N.D.
Chloromethane	1	N.D.	1,1,2,2-Tetrachloroethane	1	N.D.
2-Chlorotoluene	1	N.D.	Tetrachloroethene	1	N.D.
4-Chlorotoluene	1	N.D.	Toluene	1	N.D.
Dibromomethane	1	N.D.	1,2,3-Trichlorobenzene	1	N.D.
1,2-Dibromo-3-Chloropropane	3	N.D.	1,2,4-Trichlorobenzene	1	N.D.
1,2-Dibromoethane	1	N.D.	1,1,1-Trichloroethane	1	BDL
Dibromomethane	2.2	N.D.	1,1,2-Trichloroethane	1	N.D.
1,2-Dichlorobenzene	1	N.D.	Trichloroethene	1	N.D.
1,3-Dichlorobenzene	1	N.D.	Trichlorofluoromethane	1	N.D.
1,4-Dichlorobenzene	1	N.D.	1,2,3-Trichloropropane	1	N.D.
Dichlorodifluoromethane	1	5.48	1,2,4-Trimethylbenzene	1	4.65
1,1-Dichloroethane	1	5.65	1,3,5-Trimethylbenzene	1	4.88
1,2-Dichloroethane	1	N.D.	Vinyl Chloride	1	N.D
1,1-Dichloroethene	1	N.D.	m&p-Xylenes	1	2.27
cis-1,2-Dichoroethene	1	N.D.	o- Xylenes	1	N.D.
trans-1,2-Dichloroethene	1	N.D.			
1,2-Dichloropropane	1	N.D.			
1,3-Dichloropropane	1	BDL			

Comments:

DL - Detection Limit
N.D. - Not Detected
BDL - Below Detection Limits
ug/L - Parts per Billion
* mg/L - Parts per Million

ECHD
Environmental Health Services Division

Elkhart County Ground Water Protection Ordinance
REGISTRATION FORM

(see back for directions)

SECTION I — **GENERAL INFORMATION**

A. NAME OF BUSINESS RE Jackson Co, Inc
ADDRESS 53217 Marina Dr
CITY Elkhart, IN ZIP CODE 46514-8886
TOWNSHIP Osolo

B. CONTACT PERSON Chris Rizzo PHONE 264-7557
ALTERNATE PHONE

C. Are you RCRA inspected? YES ___ NO ✓ if YES when was the last inspection ___

D. Has CERCLA (SARA Title III) information been provided to Elkhart County? YES ___ NO ✓

E. OWNER/REPRESENTATIVE'S SIGNITURE [signature] DATE 1-28-93

SECTION II — **ON-SITE WASTEWATER DISPOSAL REGISTRATION**

	A. Type	B. Purpose	C. Location	D. Estimated Flow
1.	Sptk 1	Sewage	Front bldg	88 employees
2.	Sptk 2	Sewage	rear bldg	

SECTION III — **STORAGE OF TOXIC OR HAZARDOUS SUBSTANCES**

A. Substance	B. Class	C. Maximum Amount	D. Location	E. Type of Container

TO BE RETURNED TO ELKHART COUNTY HEALTH DEPARTMENT
4230 ELKHART ROAD
GOSHEN, IN 46526
PHONE: (219) 875-3391

Multi-Page Separator Sheet

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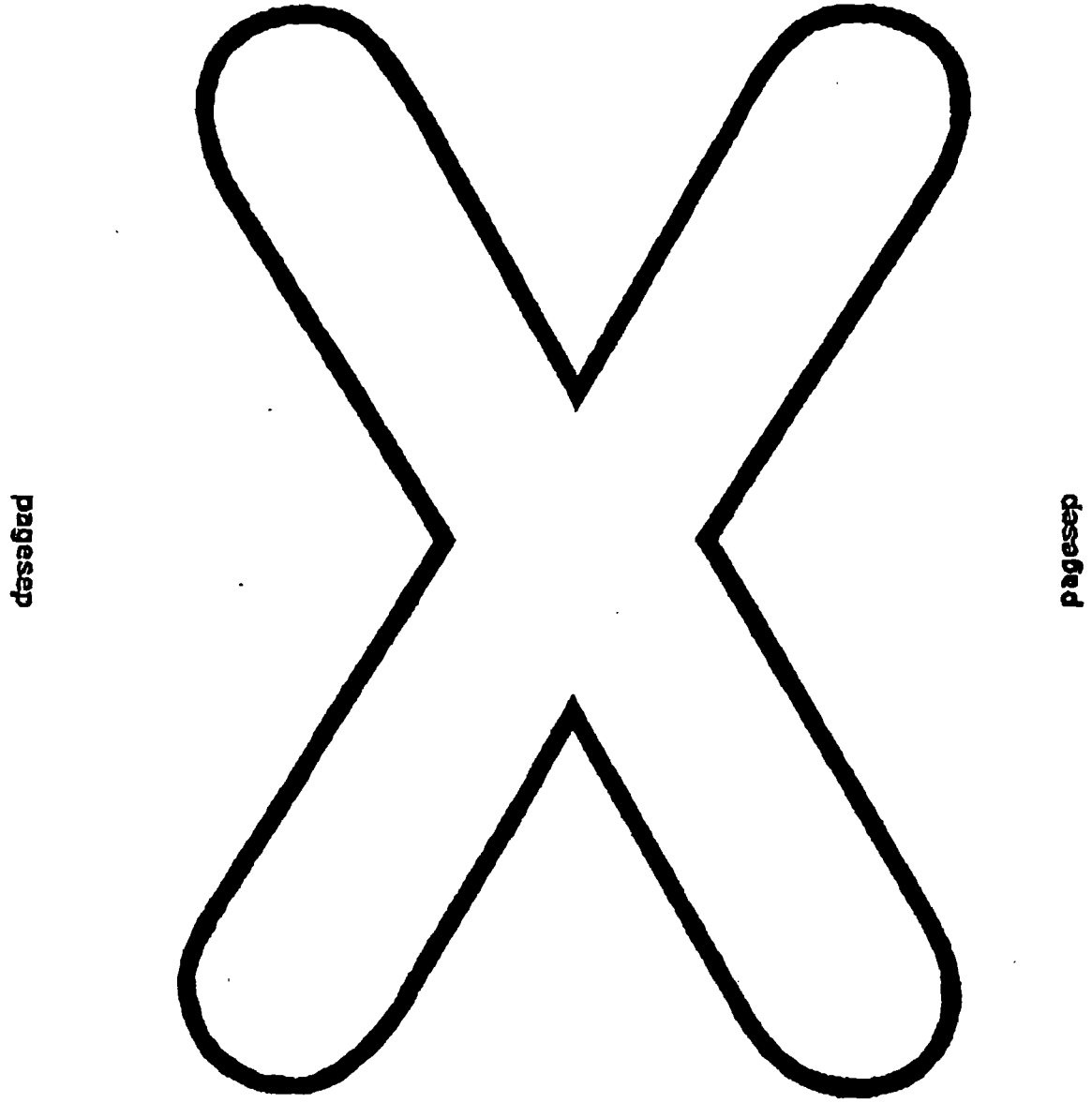

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ELKHART COUNTY HEALTH DEPARTMENT

Environmental Health Services

4230 Elkhart Road
U.S. 33 & C.R. 26
Goshen, Indiana 46526
(219) 875-3391

Frederick W. Bigler, M.D.
Health Officer

April 19, 1993

Mr. Christopher Rizzo
RE Jackson Company, Inc.
53217 Marina Drive
Elkhart, IN 46514-9586

Dear Mr. Rizzo:

The purpose of this correspondence is to discuss with you a concern of this department regarding a discharge into the septic system on the east side of your facility.

During our initial inspection of January 28, 1993, it was discovered that this septic system was receiving a regular discharge from a degreaser tank located in your facility. Although subsequent testing of this discharge revealed relatively low contaminant levels, under rules adopted by the Indiana State Board of Health (410 IAC 6-10-2 and 6-10-3), it is illegal to dispose of process wastewaters into septic systems.

It is our recommendation that you find an alternate means of disposing or recycling of this wastewater. Your attention to this matter, we feel, will prevent possible groundwater contamination and/or legal liability in the future. Your cooperation in this matter is appreciated.

Sincerely,

Geoffrey S. Downie

Geoffrey S. Downie
Environmentalist II

GD/dlc

R.E. JACKSON COMPANY, INC.

April 12, 1993

Mr. Geoffrey S. Downie, Environmentalist II
Elkhart County Health Department
4230 Elkhart Road
Goshen, IN 46526

Dear Mr. Downie:

Enclosed are results from VOC analysis. This analysis was performed to comply with the Ground Water Protection Ordinance inspection done on 1/28/93.

If you require any further information, please advise me.

Sincerely,

Christopher Rizzo
Personnel Director

CRdw

53217 MARINA DRIVE • ELKHART, INDIANA 46514-9586 • 219/264-7557
FAX 219/264-7316

3-9-95

R.E. JACKSON COMPANY, INC.

March 3, 1995

Mr. Geoffrey S. Downie, REHS
Environmentalist III
Environmental Health Services
Elkhart County Health Department
4230 Elkhart Road
Goshen, IN 46526

Dear Mr. Downie:

Enclosed are the results from the VOC analysis.

If you require any further information, please let us know.

Sincerely,

Susan E. McCoy

Susan E. McCoy
Safety Director

/m

encl.

53217 MARINA DRIVE • ELKHART, INDIANA 46514-9586 • 219/264-7557
FAX 219/264-7316

Safety & Environmental Resources, Inc.
OSHA/EPA Training & Consulting

14009 JEFFERSON BLVD.
P.O. BOX 1308
MISHAWAKA, IN 46546-1308
PHONE: (219) 258-0778
24 HOUR PHONE: (219) 258-0507
FAX: (219) 258-4748

DAN WILSON
PRESIDENT

DAN SCHROEDER
EXECUTIVE VICE PRESIDENT

SER Oil Services
Waste Oil/Water Processing
Specialty Products

TRACE ID: K034-01
REPORT DATE: 02/21/95
ANALYSIS DATE: 02/13/95
ANALYST: gmr

CLIENT ID: R.E. Jackson
SAMPLE ID: Test Chamber A0341

SAMPLE DATE: 01/31/95
SAMPLE RECEIVED: 02/07/95
SAMPLE TYPE: Water
SAMPLER: km

EPA 8260 VOLATILES	RESULTS (ug/L)
Benzene	<1
Bromodichloromethane	<1
Bromoform	<1
Bromomethane	<1
Carbon tetrachloride	<1
Chlorobenzene	<1
Chloroethane	<1
2-Chloroethylvinyl ether	<10
Chloroform	<1
Chloromethane	<1
Dibromochloromethane	<1
1,3-Dichlorobenzene	<1
1,2-Dichlorobenzene	<1
1,4-Dichlorobenzene	20
1,1-Dichloroethane	<1
1,2-Dichloroethane	1.0
1,1-Dichloroethene	<1
trans-1,2-Dichloroethene	<1
1,2-Dichloropropane	<1
cis-1,3-Dichloropropene	<1
trans-1,3-Dichloropropene	<1
Ethyl benzene	<1
Methylene chloride	43
1,1,2,2-Tetrachloroethane	<1
Tetrachloroethene	1.5
Toluene	5.7
1,1,1-Trichloroethane	<1
1,1,2-Trichloroethane	<1
Trichloroethene	<1
Trichlorofluoromethane	<1
Vinyl chloride	<1
Xylenes	<3

Safety & Environmental Resources, Inc.
OSHA/EPA Training & Consulting

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P.O. BOX 1308
MISHAWAKA, IN 46546-1308
PHONE: (219) 258-0778
24 HOUR PHONE: (219) 258-0507
FAX: (219) 258-4748

DAN WILSON
PRESIDENT

DAN SCHROEDER
EXECUTIVE VICE PRESIDENT

SER Oil Services
Waste Oil/Water Processing
Specialty Products

TRACE ID: K034-01
REPORT DATE: 02/21/95
ANALYSIS DATE: 02/13/95
ANALYST: gmr

CLIENT ID: R.E. Jackson

SAMPLE DATE: 01/31/95
SAMPLE RECEIVED: 02/07/95
SAMPLE TYPE: Water
SAMPLER: km

SAMPLE ID: Septic Tank #1 A0342

EPA 8260 VOLATILES	RESULTS (ug/L)
Benzene	<1
Bromodichloromethane	<1
Bromoform	<1
Bromomethane	<1
Carbon tetrachloride	<1
Chlorobenzene	<1
Chloroethane	<1
2-Chloroethylvinyl ether	<10
Chloroform	<1
Chloromethane	<1
Dibromochloromethane	<1
1,3-Dichlorobenzene	<1
1,2-Dichlorobenzene	<1
1,4-Dichlorobenzene	110
1,1-Dichloroethane	<1
1,2-Dichloroethane	<1
1,1-Dichloroethene	<1
trans-1,2-Dichloroethene	<1
1,2-Dichloropropane	<1
cis-1,3-Dichloropropene	<1
trans-1,3-Dichloropropene	<1
Ethyl benzene	<1
Methylene chloride	57
1,1,2,2-Tetrachloroethane	<1
Tetrachloroethene	<1
Toluene	24
1,1,1-Trichloroethane	<1
1,1,2-Trichloroethane	<1
Trichloroethene	<1
Trichlorofluoromethane	<1
Vinyl chloride	<1
Xylenes	<3

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DAN WILSON
PRESIDENT

DAN SCHROEDER
EXECUTIVE VICE PRESIDENT

SER Oil Services
Waste Oil/Water Processing
Specialty Products

TRACE ID: K034-01
REPORT DATE: 02/21/95
ANALYSIS DATE: 02/13/95
ANALYST: gmr

CLIENT ID: R.E. Jackson

SAMPLE DATE: 01/31/95
SAMPLE RECEIVED: 02/07/95
SAMPLE TYPE: Water
SAMPLER: km

SAMPLE ID: Septic Tank #2 A0343

EPA 8260 VOLATILES	RESULTS (ug/L)
Benzene	<1
Bromodichloromethane	<1
Bromoform	<1
Bromomethane	<1
Carbon tetrachloride	<1
Chlorobenzene	<1
Chloroethane	<1
2-Chloroethylvinyl ether	<10
Chloroform	<1
Chloromethane	<1
Dibromochloromethane	<1
1,3-Dichlorobenzene	<1
1,2-Dichlorobenzene	<1
1,4-Dichlorobenzene	86
1,1-Dichloroethane	<1
1,2-Dichloroethane	2.4
1,1-Dichloroethene	<1
trans-1,2-Dichloroethene	<1
1,2-Dichloropropane	<1
cis-1,3-Dichloropropene	<1
trans-1,3-Dichloropropene	<1
Ethyl benzene	1.6
Methylene chloride	59
1,1,2,2-Tetrachloroethane	<1
Tetrachloroethene	<1
Toluene	9.2
1,1,1-Trichloroethane	<1
1,1,2-Trichloroethane	<1
Trichloroethene	1.1
Trichlorofluoromethane	<1
Vinyl chloride	<1
Xylenes	16

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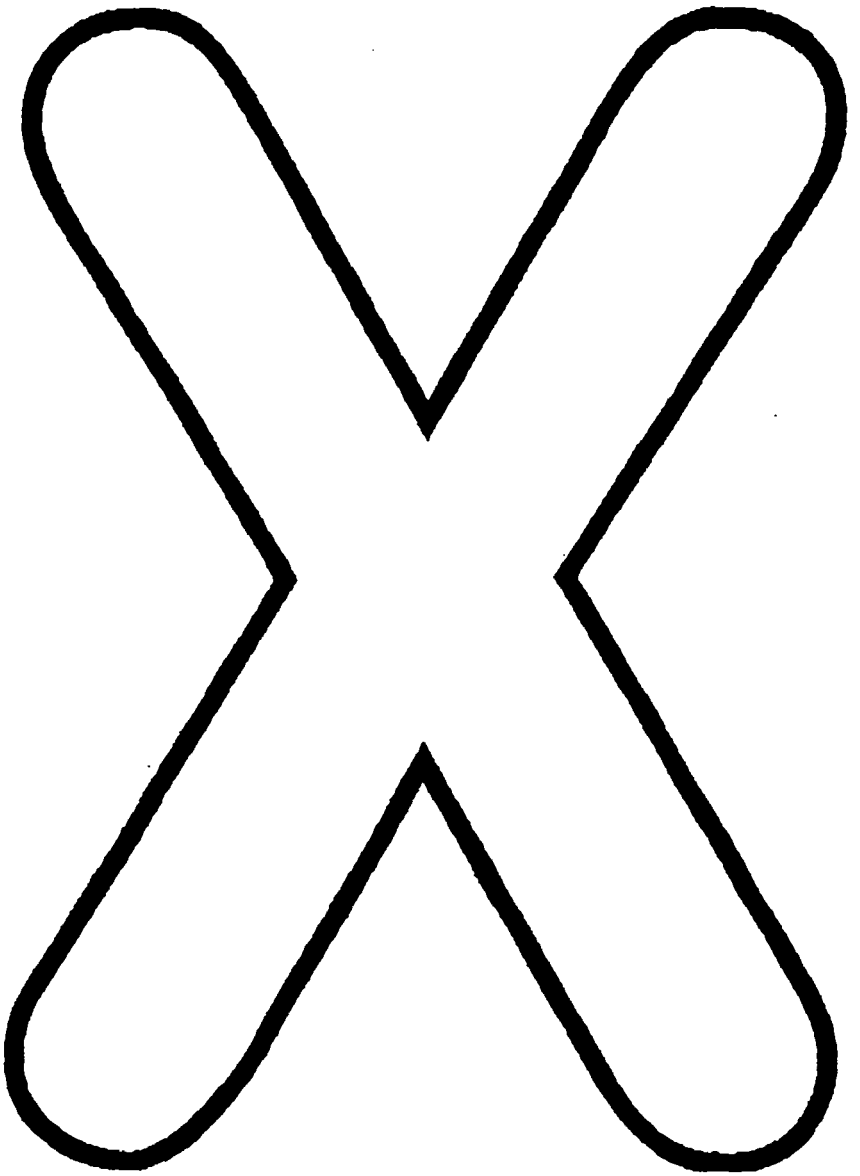

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R. E. Jackson Company, Inc.

53217 MARINA DRIVE
ELKHART, INDIANA 46514-9586
219/264-7557

January 28, 1986

Elkhart County Health Department
315 S. 2nd Street
Elkhart, IN 46516

ATTN: Max Michael

Dear Max:

On January 9, 1986, Norm Gray from the Indiana State Board of Health told me (after reviewing the MSDS on Grimex) that we could dump our degreasing fluid down our septic system. Mr. Gray said to check with city or county officials to see if they had any preconditioning requirements before dumping.

For your review, I have sent a copy of the MSDS on Grimex. Please look at it and give me a call at 264-7557.

Thank you.

Sincerely,

Stephen

Stephen Squibb
Health & Safety Director

SSdw

Co Health Dep

STATE OF INDIANA

INDIANAPOLIS

STATE BOARD OF HEALTH
AN EQUAL OPPORTUNITY EMPLOYER

Address Reply to:
Indiana State Board of Health
1330 West Michigan Street
P. O. Box 1964
Indianapolis, IN 46206-1964

March 26, 1986

Mr. Stephen Squibb
Health and Safety Director
R. E. Jackson Company, Inc.
53217 Marina Drive
Elkhart, IN 46514

Dear Mr. Squibb:

Re: Discharge of Degreaser into Septic System

As a result of a conversation between you and a member of my staff on February 25, 1986, concerning the proposed disposal of industrial wastewater containing a heavy duty alkaline cleaner and degreaser (called "Grimex") along with associated contaminants into the plant septic system, staff has decided that this proposal should not be practiced for the following reason(s):

- use of this type of compound may interfere with the settling performance of the solids in the septic tank and the eventual distribution of the wastewater into the tile field regardless of whether or not the industrial discharge is on a continuous or intermittent basis;
- the resultant solids from the septic tank may not be ideally suited for the eventual treatment at the local publicly operated treatment works depending on septage characteristics.

If you have any questions concerning this matter, please contact Mr. Robert Kelsey of my staff at AC 317/633-0838.

Very truly yours,

Larry J. Kane

Larry J. Kane, Chief
Permits Section
Division of Water Pollution Control

RAK/sck
cc: Elkhart County Health Department--Mr. Max Michael ✓

STATE OF INDIANA

INDIANAPOLIS

STATE BOARD OF HEALTH
AN EQUAL OPPORTUNITY EMPLOYER

Address Reply to:
Indiana State Board of Health
1330 West Michigan Street
P. O. Box 1964
Indianapolis, IN 46206-1964

April 24, 1985

Eldon Squibb, Health and Safety Manager
R.E. Jackson Company, Inc.
53217 Marina Drive
Elkhart, IN 46514

Dear Mr. Squibb:

This is to affirm our telephone conversation regarding the disposal of used alkaline cleaner-degreaser at your facility. To avoid the possibility of groundwater pollution, our policy is that no industrial process wastes or wastewaters may be disposed of in a septic system or similar ground absorption, sanitary waste treatment system.

It is recommended that any wastewater generated by parts cleaning in your operation be collected and disposed of at an appropriate wastewater treatment facility. You may wish to enlist the assistance of a licensed liquid industrial waste hauler to accomplish this.

The wastewater should probably be analyzed for hazardous waste characteristics, particularly corrosivity ($2 > pH > 12$) before a disposal method is secured.

If you have further questions, contact me at 317/633-0840. Your concern in this matter has been proper.

Very truly yours,

Martin Risch

Martin Risch
Groundwater Section
Division of Water Pollution Control

MRisch/lfv
cc: Mr. George Halloran
Inspection Section
Mr. Rick Brown
Elkhart County Health Department

PHONE CONVERSATION RECORD

Conversation with:

Name Joe Stallsmith

Company ISBH - WPCO

Address

Phone 317-633-0795

Subject RE Jackson Discharge

Date 2 / 3 / 86

Time 4 AM/PM (PM circled)

☐ Originator Placed Call

☐ Originator Received Call

Notes:

Stallsmith Notified

+ Copies Sent

+ Joe to cc Letter between ISBH + RE Jackson

to mention our dept to RE Jackson → that we had notified ISBH

X File

/ /

Follow-Up By:

Copy/Route To:

Follow-Up Action: Contact RE Jacks

Done Tell them Stallsmith

2-4-86 new Contract

Originator's Initials

11

Dec. 8. 2008 2:02PM

Speed Letter® No. 7722 P. 30

To JOE STAHLSMITH

ISBH - WPCD

From MAX D. MICHAEL

Groundwater Protection Program Coordinator

Elkhart County Health Dept

Subject R. E. Jackson Company

MESSAGE

Enclosed please find a letter and accompanying Material Safety Data Sheet from Stephan Squibb. It was our understanding at ECHA that such inquiries were to be directed to either yourself or Larry Kane — Is Norm Gray now included? Please keep me informed of any developments concerning R E Jackson Thank you Date Feb 4 1986 Signed Max D. Michael

REPLY

Date Signed 10

NilsonJones
STRAYLINE FORM 44-802 3-PART
1985 - PRINTED IN U.S.A.

SENDER—DETACH AND RETAIN YELLOW COPY. SEND WHITE AND PINK COPIES WITH CARBON INTACT.

0030

ELKHART COUNTY
COMPLAINT FORM

Date: 8/15/84 Department: HEALTH Taken By: R.T. BROWN

Location: N.S.E.W. side/cor. of MARINA & COOPER mi./ft. N.S.E.W. side/cor. of _____

Address: 53217 MARINA DR. Twp: _____ Zone: _____

Complaint: FLOOR DRAIN IN NEW BUILDING WITH PIPE TO NEW SEPTIC TANK - SUSPECT POSSIBLE PROCESS D/C - OTHER BUILDING ATTACHED (OBSERVED FROM) & 1,1,1 - TRICHLOROETHANE USED - WHICH WAS DENIED BY TERRY K. SHELLY, V.P. OPERATIONS - ALSO OBSERVED COMPRESSORS LEAKING OIL ON FLOOR.

Property Owner: R.E. JACKSON CO., INC. Telephone Number: 264-7857

Address: 53217 MARINA DR.

Referral - Department: _____ Date: _____

Conditions Found: SHELLY CLAIMED DRAIN WAS USED TO WASH WINDOWS & CHECK FOR LEAKS - SEPTIC SYSTEM WAS GIVEN OK PER T.R.W. FOR COVER-UP.

Action: NEED TO INCLUDE IN SURVEY

Reinvestigation: _____ Closed: _____

By: _____ Return Call Requested: Yes _____ No _____

Reported By: ECHD PERSONNEL

Address: _____

Telephone Number: _____

(11-22-81)

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